PAGE 6 PUBLISHING's

NEW ATARI USER

Issue 53 £1.95

December/January

XL/XE

DICE

By John Young

DICE! and DROIDZ!

Two great type-in listings

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(the saga concludes)

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NOW AVAILABLE FROM PAGE 6 ....

NEW SOFTWARE FROM GERMANY

With so little software now being released for the XL/XE machines we are pleased to be able to bring you some new software from Germany where the Atari 8-bit is still going strong. We have selected the following from those offered which we believe represent a good addition to the software that is still available in this country. As Atari software does not nowadays sell in sufficient quantities you won't find any fancy packaging but these are presented quite adequately. What is more important is that there are still companies writing for the XL/XE and it is up to us to support the better products. Let's see if you still want new software.

Sadly for cassette users, all these programs are on disk only but we will do our best to look out for new and worthwhile software on cassette in the future.

GLAGGS IT!

Let's face it, none of the big boys who write for the ST are going to translate their big hits to the 8-bit so it is a great joy to discover this version of KLAX, one of the recent big ST hits. The concept is simple, the addiction total and the challenge progressively harder. What you do is collect various coloured tiles as they fall through vertical chutes and then arrange them in 'Glaggses' - piles of the same colour and of a number predetermined at the start of the level. As the game progresses so more colours are introduced, the tiles fall faster and you need to think and plan ahead as fast as you can.

KLAX was one of this year's early smashes on the ST and GLAGGS IT! is set to do the same on the 8-bit. Prepare to become addicted!

DISK ONLY £6.95

PLAYERS DREAM 1

Another thinking challenge that became a big hit on the ST was PUZZNIC and now this top game comes to the 8-bit in the form of PLOTS, one of two games on this disk. Another simple concept, yet a challenge that will have you thinking hard if you want to get beyond the early levels. In PLOTS you fire a coded block at a pile of others, either directly or by using the walls of the play area for angles, in an attempt to match like cubes. You have a set number of matches to make on each level and as the game progresses you must think very carefully about where to place your cubes. Hitting a like cube, or a row of such cubes, eliminates them and causes others above to drop in their place. Sometimes it helps, sometimes it makes it impossible to continue. You have to think very carefully. Another ST smash comes to the 8-bit!

P.S. When you need a rest there's a great ski game on this disk as well, mind you that one's quite tricky as well!

DISK ONLY £6.95

TAIPEI

As a change from the hectic life of alien blasting or quick reactions, there is nothing better than a good game of solitaire, whether with cards or something else. One of the more challenging solo games is Taipei, which uses the oriental Mah-Jong tiles for a solo game which involves matching similar tiles according to some simple rules. Only tiles which can be slid out to left or right may be matched and the challenge lies in selecting the correct pairs of tiles so that the various layers can all be revealed. This is another game that has been popular on the ST (I have a PD version on my hard drive which gets played whenever I need a rest from hard thinking) and this is a great version on the 8-bit. Several different game options will keep this game interesting for many a year. Ideal for those times when you want to relax yet keep alert - maybe late into the night?

DISK ONLY £6.95

RUBBER BALL

It's not often that a truly original concept comes along, most games are just variations on a theme, but we have never seen anything quite like Rubber Ball. You start with a small super bouncy ball on a platform at the top of the screen with which you must pick up various objects on other levels way down the screen. You can move the ball from side to side but in order to bounce onto the different platforms you must keep the ball bouncing, either off of the walls or by dropping from great heights. As you bounce down from each platform the whole screen smoothly bounces revealing parts of the screen normally out of sight. The effect is quite hypnotic! You must keep the ball bouncing at all times and you must, at all costs, avoid the spikes and chewing gum dotted around which spell disaster. At first it seems quite simple but this is a game that ends up as a serious challenge both in manipulating the ball and in working out where to go next.

Truly original ... truly challenging ... a great new Atari game.

DISK ONLY £9.95

INVASION

We could have picked some simple blast 'em games but with many of these around in the public domain we wanted something with a little more challenge to offer you. In this arcade game your objective is to build a bridge to enable your tank division to cross into a hostile area. You have an attack helicopter which can also carry sections of the bridge and you must locate these sections and carry them to the river while fending off attacks from enemy copters. Timing is of the essence as waves of enemy copters attack both before you locate the bridge sections and as you carry them to the river. Later, enemy planes will drop bombs by para-chute and you will have to destroy these before they reach the bridge.

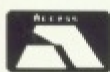
Invasion is a nice little arcade game with lots of challenge and a good objective - and just a little different from the usual.

DISK ONLY £6.95

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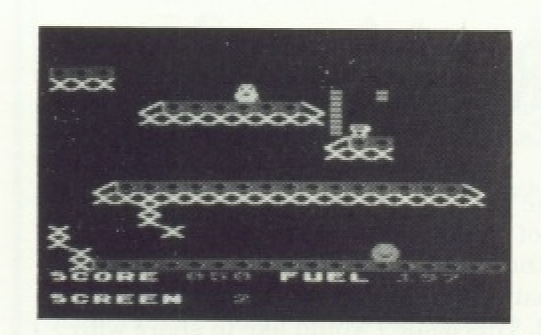
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VISA

'The magazine for the Dedicated Atari User'

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DROIDZ!

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SUBMISSIONS

PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it! Appropriate payment will be made for all published programs and articles, all payments being made at the end of the second month shown on the cover of the issue concerned.

The next issue of NEW ATARI USER will be on sale 30th January
Editorial copy date is 16th December

ST FILE

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Issue 53
December/January 1991/2

'The Magazine for the Dedicated Atari User'

ISSN No. 0958-7705

THE CREDITS

All of the usual stuff is on page 3 but here are the people who made this issue possible.

Les Ellingham is still surviving but having a hard time this issue trying to think of something to say in these credits!

Sandy carries on as usual paying the bills, getting the ads, and running round the office trying to keep up with Paulette

Paulette is simply wonderful! Everything she does is perfect and all the marvellous ideas she has come up with have made it so much easier for us. It is amazing to have someone really excellent around the place, goodness knows how we have coped so far without her. (There we are, a little bit of praise and flattery and we can get out of giving her a Christmas bonus!)

The Regular Contributors, who provide the backbone of the magazine and can generally be relied upon to come up with good articles and reviews, are ....

John S Davison
John Sweeney
Damon Howarth
Dion Guy
John Davison jr
Paul Rixon
Ian Finlayson
The Tipster

Bye, Peter, thanks for the column

All other contributors for this issue are individually credited alongside their articles or programs. Thanks to everybody for sharing their enthusiasm with other Atari users.

The cover photo is one of those late decision things that hasn't been decided yet. Most probably it will be a screen shot of the main game this issue, if not we'll let you know the details next time.

Well, who do you think provided the inspiration this time? Have a guess. Yes, that's right, Van Morrison yet again with a superb double CD that took a while to get into (it's long!) but has turned out to be of the usual excellent standard. Talking of excellence, there was also Nanci Griffiths with another fine set (especially Down and Out). Others include Mary Black, not yet fully appreciated as the CD is playing up, Billy Bragg with a mix of fine and not so fine stuff, and Dire Straits which I nearly didn't buy. It turned out to be much better than expected and includes a couple of tracks that are exactly what The Notting Hillbillies should have been. Latest addition is Marc Almond (what!) 'cos Jacky is excellent (come on then, how many of you have heard of Jacques Brel?) but the rest of it doesn't quite match up although The Days of Pearly Spencer comes close (who remembers that?).

The next issue of NEW ATARI USER could feature YOUR article or program, so SEND IT IN NOW!

PAGE 6 shows just what you can do with your Atari. NEW ATARI USER has always been created entirely with Atari equipment, initially on the XL but more lately with a Mega ST and other stuff, who needs PC's or Macs! With the exception of the final output on a Linotron and the use of an in-house repro camera for the photos and listings everything is done on the ST. Hardware includes a Mega ST2 (upgraded to 4Mb), SM125 Monitor, Supra 30Mb Hard Disk, an Atari Laser Printer, Citizen 124D printer, Philips CM8833 monitor, 130XE, XF551 disk drive, 810 disk drive, 850 interface, NEC 8023 printer. Principal software used is Protext and Fleet Street Publisher 3.0. Other software includes Kermit, TariTalk, Turbo Basic and various custom written programs on the XL/XE. Articles and programs submitted on XL/XE disks are subjected to various custom written programs before being transferred across to the ST via TARITALK. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. A disk with the finished pages as Postscript files is sent to a typesetting bureau to be output on a Linotron and, hey presto, finished pages are sent back exactly as you see them. It really does work! All that is left is to drop in the listings and photos.
Well, it's not quite as easy as that but you get the idea!

Editorial

PARCELFORCE or PARCELFARCE?

Having an editorial column in a magazine gives me an opportunity, not shared by many, to express views on all sorts of subjects. In the past I have tried to comment only on subjects relevant to the world of Atari computing but there comes a time when it is pertinent to mention matters that have only a slim bearing on the subject to which this magazine is dedicated. This issue I would like to share with you some experiences of an organisation that every one of you comes into contact with to a greater or lesser degree - the Post Office (or Royal Mail Letters and Parcelforce, as they have spent millions of pounds changing their name to).

I wonder how many readers have had cause to complain about the postal service? Certainly one of our customers in Sheffield is not too happy. He ordered some software from us which we duly despatched. A few weeks later he phoned to enquire whether it had been sent and we duly sent another parcel. Again this failed to arrive so we sent it again, this time by recorded delivery. A while later the first two parcels were returned, one marked 'no such number' and the other 'not called for'. The addresses on these, and on the third parcel which arrived, were identical. The customer says that he had never been notified that there was a parcel awaiting collection. The Post Office claim, of course, that a card was put through the customers letterbox, but was it? We had a similar experience a while ago when a parcel failed to arrive. I telephoned the sender who, luckily, had sent it by 'Trackback'. He made enquiries and was advised that it was awaiting collection at the sorting office since I had not responded to the advice card. I had received no such card. A trip to the sorting office resulted in the discovery of about half a dozen other items, mostly overseas registered letters, which had never been notified. Some of these were over two months old!

How about some other examples of the service provided? At fairly regular intervals our first post is not delivered and we have to wait until lunchtime before we can begin work for that day. As we try to despatch orders on the day they are received, this makes it rather difficult to complete the day's orders in time for the afternoon collection which, although scheduled for a set time, is often up to an hour early! Minor irritations include our morning's post being left propped up outside the front door on a day when I was away simply because the postman couldn't be bothered to remove the elastic bands. The lunchtime post was duly delivered by, presumably, another postman who had to step over the post which still lay on the doorstep!

Last issue I had to leave out one review because a disk posted to us by First Class post on a Tuesday arrived on Saturday, the day after the artwork had to be sent off. A couple of weeks earlier, I was sweating hard to complete the typesetting because two columns, posted First Class on a Thursday had not arrived by the following Tuesday. It was a Bank Holiday weekend and the Saturday delivery failed to materialise. Naturally nobody at the sorting office was answering the phone and at lunchtime on a Saturday they all go home. Of course, there was nobody there on the Monday. Tuesday's delivery arrived on time but the disks were not there and a check of the postmarks indicated that those items due to be delivered on Saturday were not there. At this stage I was more than a little annoyed and so went down to the sorting office only to be told that the Saturday post had been delivered or that we had not had any post that day. Getting nowhere I asked to see the supervisor and, as politely as possible, explained the situation and mentioned that there must have been post for us on Saturday since two items were posted First Class on the Thursday and, if they had not arrived the next day, should have arrived on the Saturday. Now I was under the impression that First Class post should arrive within two working days. 'Not necessarily' I was told! Anyway, to cut a long story short (and it was a long story), after demanding that they look for the missing post, lo and behold, it turned up after a half hour search on somebody's desk! I was more than peeved to discover that, in addition to the two missing disks, there was also a parcel of books worth over £200. What would have happened to these had I not known for certain that there was post that had not been delivered?

The saga continues, but now begins to get boring so I will not labour on. Let's finish by mentioning that at least a dozen subscription copies each issue never arrive and many others are late. If you are one of those who have to wait until Saturday to receive your copy (they are posted on a Monday) you might like to know that we have a subscriber in Italy who always phones us on the Wednesday (yes two days after despatch!) with an order!

And they keep raising the prices. The mind boggles.

Les Ellingham

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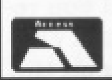
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Mailbag

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ROBOTS

Keep up the good work at New Atari User. Each issue is awaited with baited breath for the little gems and tips to improve the use of my 800XL. My previous experience with computers had included a long love affair with a ZX81 and a brief encounter with beastly BEEBS at school, so to start on a boot loading disk system was quite a step up. The fact that BASIC had to be booted to work, rather than just being presented to me as on other machines, helped me to widen my concepts of computers in general and having to root about for the functions and abilities of the machine helped so much that I am now using my system to write Artificial Intelligence algorithms for use with the Robots I build and interface to the joystick ports.

This year I am working on an intelligent maze solving system for the third year study of my science degree and I can honestly say that I owe a lot to my Atari. I would recommend anyone to play with a robot at some time - they're great fun, completely ozone friendly and can cost as little as £20 to make at home if you can use a soldering iron. Anyone out there interested in robots? Write to Mailbag and let's hear from you. Or write to me at 1, Church Street, St. Mary's, Sandwich, Kent, CT13 9HH. I can offer some ideas, plans and software and would love to hear from anyone who can or wants to interface interesting things to their Atari.

Andrew Lakin-Hall,
Sandwich

It's great when someone really gets to grips with their Atari and discovers new uses but isn't it strange when someone clever enough to write Artificial Intelligence routines can do so without understanding even the basics of the machine? Basic is built in on ROM and what needs to be booted is the Disk Operating System. Try it without switching the drive on, you can still write those programs but can then only save them to tape.

Here is a good illustration of why magazines such as this should always have simple articles on all kinds of subjects, because what one person assumes is common knowledge others may never discover, and it doesn't matter whether you are a beginner or experienced user. That is why we have always encouraged readers to submit articles on any subject connected with the Atari. It's all new to someone!

BOOKS AND SAMPLES

Can you give me any tips on how to go about sampling sound on my 800XL? Is there a simple way of doing it and how do you replay the digitised sound through the TV speaker? It must be possible somehow as sampled sound is already used by Digidrum and lots of demos. I know that this kind of question really needs a whole article devoted to it so could you recommend a book that covers sound sampling on the 8-bit?

Secondly I can program the basics in Basic but I'm interested in learning about VBI's, DLI's, player missile graphics and all the other wonderful things that my Basic manual doesn't mention. Is there a suitable book that could lead me into all these subjects gradually?

Michael Hyde
Rochester

Sound sampling is perfectly possible on the 8-bit but you need some sampling hardware and, unfortunately, there is none that we know of still available. 2-Bit Systems produced Replay for the 8-bit which was used for the samples in Digidrum and there was the Parrot sampler in the USA along with one or two others. I believe that Alpha Systems in the USA produced a book on using the Parrot sampler (or it may have been another sampler) but it was never widely available. Other than this you might like to check out the Pedrokko disks in the PAGE 6 Library which are all samples and contain a number of text files giving hints on sampling sound. Without the hardware though, you won't achieve much!

There has never been one single book to introduce you to all the aspects of the Atari so it is hard to recommend specific titles. Just get hold of anything you can, magazines, books, anything! The best book that is still available is Your Atari Computer. Expensive but well worth having and it covers most of the areas you mention. Easy Programming For The Atari Micros is also good but doesn't go too deeply into the more technical subjects. De Re Atari is one that you probably won't understand at all at first but which will be invaluable once you start more advanced programming and you should have a copy of Mapping The Atari in your back pocket at all times (if you can find a copy!).

TYPO, WHERE ART THOU?

I hope that you can help me with a problem that I am having typing in the program Page 6 Writer from Issue 50? Firstly I notice that at the beginning of each line there are some initial letters, what do these signify? I have tried incorporating them in the program line but all this does is show an error message. I found that the program types in quite well without them but I feel that there is something that I should know about these letters.

Another problem is that when I type 'RUN' the listing will run and then it shows a data error in line 1000. I have checked and re-checked the line and it is exactly as the printed program. I am now wondering if the two letters I previously mentioned have something to do with this problem. I also notice that in the instructions for typing in the program it says use Typo 3 to check each data line but I don't know what it means. Can you put me right?

M.J. Tester
Brighton

The codes at the beginning of our program listings are checksums used by the program Typo 3 for you to check whether you have typed in the line correctly. You simple run Typo 3 before typing in your program and then as you press Return at the end of each line a code will appear on screen. If this code matches that shown in the magazine you know that you have typed the line correctly. If the code is different, edit the line until the code matches. The biggest problem is that we have not published the Typo 3 listing for a good number of issues due to lack of space, so this issue we are dropping one page of Mailbag so that we can include the Typo 3 listing once again. You should find it nearby. Follow the instructions and you should have the program up and running in no time and you can safely type in all the other programs from each issue knowing that the lines will be checked as they are entered.

WRITE!

That letter about TYPO 3 solved the problem of finding more letters for this issue's Mailbag! It's getting harder and harder to find interesting letters to include for various reasons. Most of what gets published has to be extracted from long winded full page letters, many of the letters we receive ask questions that require five page answers(!) and others just say nice things without saying anything interesting. So help us out folks and write some short, straightforward letters that we can publish for the interest of others. Tell us something, ask us some questions but keep it fairly short and don't put fifteen questions in one letter. Oh, and by the way, stick MAILBAG on the top in big bold letters! Go to it!

TYPO 3

HOW TO TYPE IN THE LISTINGS *AND GET THEM RIGHT FIRST TIME!*

NOW RESET PROOF!

Here is an amended version of our TYPO 3 program which we recommend that all readers use when typing in programs. This version is fully compatible with earlier versions but is now 'Reset proof' so that if you press the System Reset key you will not loose the TYPO facility.
If you have already typed in TYPO the changes are shown in the panel below and can simply be added to your original program.

WHAT TYPO IS ALL ABOUT

The program listings in NEW ATARI USER are prepared carefully to ensure that they can be typed in as easily as possible. Before typing any listings ensure that you are familiar with the use of the Shift and CONTROL and INVERSE keys as outlined in your computer manual. The listings are prepared to match exactly what you see on screen. By using TYPO 3 you can ensure that you type in the programs EXACTLY as they are printed. Remember, a single typing mistake may mean a program will not run.

WHAT ARE THOSE CODES?

Each line of a program printed in NEW ATARI USER begins with a special two letter code. THESE SHOULD NOT BE TYPED IN. They are used by the program TYPO to check that you have typed each line correctly. IF YOU HAVE NOT ALREADY TYPED IN THE TYPO 3 LISTING PLEASE DO SO NOW. The program can be used as you type in each line of a program or to check an already typed program. The code for each line will match but if you have problems check the control characters shown in your manual, you are most probably typing a CONTROL character incorrectly. TYPO 3 cannot check whether a line has been missed so if the TYPO codes match and you still have problems in running a listing count the lines in the program and ensure none are missing. If the TYPO codes match, there are no missing lines and the program still does not run, LIST it to cassette or disk using LIST "C:" or LIST "D:filename", switch off the computer, re-boot and then ENTER the program using ENTER "C:" or ENTER "D:filename". Save this version in the normal way.

HOW TO USE TYPO 3

1. Type in the listing carefully for although you can use TYPO 3 to check itself (see 6 below) it may not work if you have made mistakes.

2. SAVE or CSAVE a copy of the program.

3. Each time you want to type in a program listing RUN TYPO 3 first. The program will install a machine code routine in memory and then delete itself. Now type in a line as shown in the magazine excluding the first two letter code and press RETURN.

4. A two letter code will appear at the top left of your screen. If this code matches the one in the magazine carry on and type the next line. Note, the code will not match if you use abbreviations. If you prefer to use abbreviations LIST the line you have just typed, move the cursor to that line and press RETURN. The code should now match.

5. If the code does not match, use the editing keys to correct the line and press RETURN again. Repeat if necessary until the codes match.

6. To check a line you have already typed LIST the line, place the cursor on that line and press RETURN.

7. When you have finished a listing just SAVE or CSAVE it in the normal way.

You can type in a program without using TYPO 3 and then check it by SAVEing or CSAVEing a copy of the program, running TYPO 3 and then LOADing or CLOADing your program and proceeding as in step 6 above.

Always SAVE or CSAVE a program before running it and always use TYPO before telling us that a program will not run.

OUR UNIQUE LINE BY LINE CHECKER WORKS ON ALL ATARI XL/XE and earlier 8-bit machines

```
CR 0 REM ######################################
NE 1 REM #             TYPO III               #
ST 2 REM #       An Error Checker for         #
EL 3 REM #      NEW ATARI USER PROGRAMS       #
SF 4 REM # ---------------------------------- #
ME 5 REM #      Originally published by       #
VP 6 REM #           ANTIC Magazine           #
ZX 7 REM #       Updated by Alec Benson       #
EE 8 REM #         and Raphael Espino         #
DA 9 REM ######################################
AY 10 REM
SG 100 GRAPHICS 0
FH 110 TRAP 500:FOR I=1536 TO 1791:READ A
   :IF A<>INT(A) THEN POP :GOTO 500
KH 115 CK=CK+A:POKE I,A:NEXT I
CG 120 IF CK<>30765 THEN ? "Error in DATA
    statements - Check Typing":END
YM 130 A=USR(1536)
BN 135 POKE 9,3:POKE 2,1:POKE 3,6
VT 140 ? :? "TYPO III is up and running":
   NEW
BW 500 IF PEEK(195)=6 THEN ? "NOT ENOUGH
   DATA STATEMENTS PLEASE     CHECK LINES
    1000 TO 1310":END
GS 510 ERRLINE=PEEK(183)+256*PEEK(184):ER
   RNUM=PEEK(182)
JQ 520 ? "ERROR IN STATEMENT ";ERRNUM+1;"
    IN THE FOLLOWING LINE":? :LIST ERRLIN
   E
OA 530 END
MA 1000 DATA 104,160,0,105,26,3,201,69
HG 1010 DATA 240,8,200,200,200,192,36,208
QB 1020 DATA 242,96,200,169,79,153,26,3
RK 1030 DATA 200,169,6,153,26,3,162,0
RR 1040 DATA 189,0,228,157,79,6,232,224
TO 1050 DATA 15,208,245,169,93,141,83,6
KC 1060 DATA 169,6,141,84,6,173,4,228
EU 1070 DATA 105,0,141,95,6,173,5,228
BK 1080 DATA 105,0,141,96,6,169,0,162
KK 1090 DATA 3,149,203,202,16,251,96,0
ZR 1100 DATA 0,0,0,0,0,0,0,0
LD 1110 DATA 0,0,0,0,0,0,32,94
JM 1120 DATA 6,8,72,201,155,240,55,230
TV 1130 DATA 203,133,209,138,72,169,0,133
TW 1140 DATA 208,162,8,10,38,208,6,209
MF 1150 DATA 144,7,24,101,203,144,2,230
RL 1160 DATA 208,202,208,239,133,207,24,1
   65
TM 1170 DATA 204,101,207,133,204,165,205,
   101
AW 1180 DATA 208,133,205,165,206,105,0,13
   3
XH 1190 DATA 206,104,170,104,40,96,138,72
NR 1200 DATA 152,72,162,0,134,207,134,208
GF 1210 DATA 160,24,6,204,38,205,38,206
EA 1220 DATA 38,207,38,208,56,165,207,233
TM 1230 DATA 164,170,165,208,233,2,144,4
SK 1240 DATA 134,207,133,208,136,208,227,
   162
CB 1250 DATA 8,165,207,133,204,165,208,6
XN 1260 DATA 204,42,201,26,144,4,233,26
MB 1270 DATA 230,204,202,208,242,133,205,
   169
BC 1280 DATA 128,145,88,200,192,40,208,24
   9
WV 1290 DATA 165,204,105,160,160,3,145,88
QA 1300 DATA 165,205,24,105,161,200,145,8
   8
MQ 1310 DATA 32,69,6,104,168,76,153,6
```

TYPO 3 - IMPORTANT

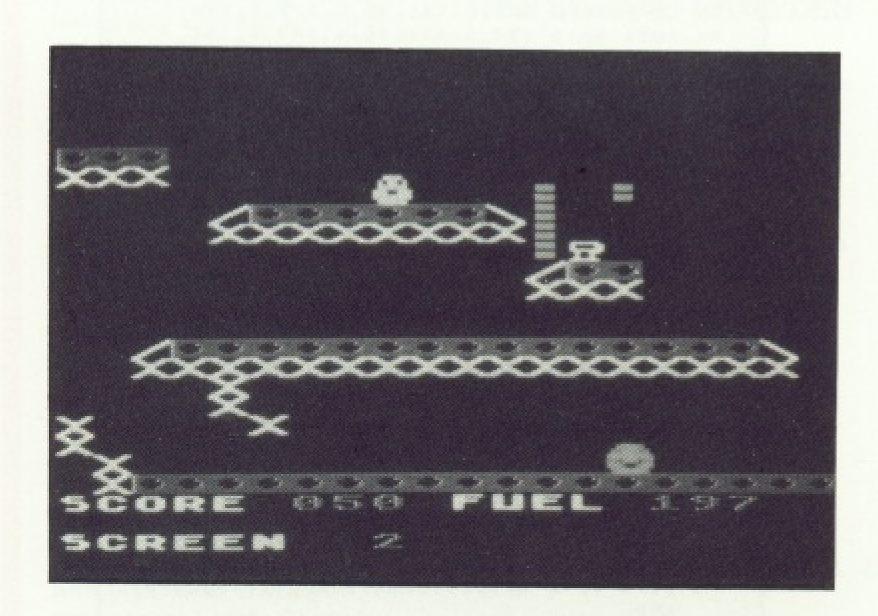
TYPO 3 now has improved error checking routines when typing the listing in. *Save the program first!* When you first run the program most typing errors will be indicated on screen. Amend the line shown and save the program again before running it. This is important since TYPO will delete itself when successfully run and you will lose the program unless you have saved it!

DROIDZ

Your mission, should you decide to accept it, is to guide your small group of rocket-assisted droids through four screens guarded by repulsive, grinning alien blobs. Being bottom-of-the-range models, the droids do not take kindly to contact with the aliens, the walls, or the girders. Also do not let them fall too far or run out of fuel.

Fuel can be obtained from the pink(!) petrol pumps. The objective is simply to cross to the right hand edge of each screen, which is not all that easy! There are three difficulty levels, selected from the title screen, and completed screens can be skipped when you start a new game.

Just a simple, fun, arcade game. Enjoy it!



BY

JOHN YOUNG

```
EI 1 REM ******************************
HU 2 REM *          DROIDZ            *
RQ 3 REM *            by              *
KK 4 REM *        John Young          *
EC 5 REM * -------------------------- *
BF 6 REM * NEW ATARI USER  - OCT. 1991 *
EO 7 REM ******************************
NN 8 REM
XI 10 GOSUB 4000:REM INITIALISE
JS 20 GOSUB 4800:REM TITLE SCREEN
FV 30 GOSUB 4400:REM NEW GAME
YB 40 GOSUB 4700:REM NEW SCREEN
QB 50 GOSUB 4500:REM DISPLAY BLOBS
MT 60 GOSUB 3900:REM NEW LIFE
CN 69 REM ---FALL AT START---
MQ 70 POKE 53278,0
RI 80 SOUND 0,200-PEEK(1539),10,6
NM 90 IF PEEK(53252)=0 THEN 80
RL 99 REM ---MAIN LOOP---
AZ 100 FUEL=PEEK(1540):NUM$="000"
WF 110 NUM$(4-LEN(STR$(FUEL)))=STR$(FUEL)
EL 120 POSITION 15,20:? #6;NUM$
UO 130 HITD=PEEK(53252):HITB=PEEK(53260):
   FALL=PEEK(1539):XPOS=PEEK(1536)
OF 140 IF HITD=8 OR HITD=9 THEN FUEL=250:
   POKE 1540,FUEL:FW=0:SOUND 1,0,0,0
IC 150 IF HITD>1 AND HITD<8 THEN GOSUB 40
   0:GOTO 700
NO 160 IF FALL>40 THEN CRFLG=1
LL 170 IF HITD=1 AND CRFLG THEN GOSUB 400
   :GOTO 700
AN 180 IF HITB<>0 THEN GOSUB 500:GOTO 700
RI 190 IF XPOS=200 THEN GOSUB 600:GOTO 40
WJ 200 IF FUEL=0 THEN GOSUB 800:GOTO 20
FC 210 IF FUEL<100 AND FW=0 THEN FW=1
NX 220 IF FW>0 THEN GOSUB 300
LN 230 GOTO 100
SA 297 REM
AI 298 REM  LOW FUEL WARNING 
SG 299 REM
PW 300 IF FW=1 THEN SOUND 1,65,10,8
MK 310 IF FW=6 THEN SOUND 1,80,10,6
WB 320 IF FW=12 THEN SOUND 1,0,0,0
CU 330 IF FW=40 THEN FW=0
ZI 340 FW=FW+1
ZJ 350 RETURN
SB 397 REM
VN 398 REM  CRASH!!! 
SH 399 REM
TO 400 SOUND 1,0,0,0:FW=0:POKE 1538,0:DL=
   PEEK(560)+256*PEEK(561)
ST 410 FOR I=7 TO 0 STEP -1
PR 420 POKE DL,I*16
XU 430 SOUND 0,70,4,8+I
GC 440 NEXT I
OV 450 FOR I=0 TO 7
PZ 460 POKE DL,I*16
YW 470 SOUND 0,70,4,7-I
GK 480 NEXT I
ZS 490 RETURN
```

DROIDZ

```
SC 497 REM
WK 498 REM  HIT BLOB 
SI 499 REM
CJ 500 SOUND 1,0,0,0:FW=0:FOR I=15 TO 0 S
   TEP -0.5
TH 510 SOUND 0,45+I,10,14
UH 520 POKE 704,128+I
GB 530 NEXT I
SL 540 FOR I=0 TO 15 STEP 0.5
TP 550 SOUND 0,45+I,10,14
UP 560 POKE 704,128+I
GJ 570 NEXT I
RD 580 SOUND 0,0,0,0:POKE 704,134
ZT 590 RETURN
SD 597 REM
DW 598 REM  SCREEN COMPLETED 
SJ 599 REM
ZQ 600 SCORE=SCORE+50*SKILL
ZK 610 IF SCREEN<NUMSCR AND SCREEN>MAXSKI
   P THEN MAXSKIP=SCREEN
RQ 620 SCREEN=SCREEN+1
JO 630 IF SCREEN>NUMSCR THEN SCREEN=1:SKI
   LL=SKILL+1:IF SKILL>3 THEN SKILL=3
KI 640 SOUND 0,0,0,0:SOUND 1,0,0,0:FW=0
ZM 650 RETURN
SE 697 REM
YW 698 REM  DIE 
SK 699 REM
QB 700 PL=PMBASE+512+PEEK(1537):POKE 1538
   ,0
OQ 710 FOR I=0 TO 7
AA 720 SOUND 0,60-I*5,8,8
NH 730 POKE PL+I,0
LO 740 FOR D=0 TO 15:NEXT D
GH 750 NEXT I
IE 760 SOUND 0,0,0,0:LIVES=LIVES-1
BC 770 IF LIVES<0 THEN SOUND 1,0,0,0:GOTO
    20
UN 780 POSITION 19,20+LIVES:? #6;" "
RY 790 GOTO 60
SF 797 REM
MN 798 REM  OUT OF FUEL! 
SL 799 REM
WD 800 SOUND 1,0,0,0
EZ 810 FOR I=704 TO 711
CB 820 C=PEEK(I)
EH 830 POKE I,48+C-INT(C/16)*16
GG 840 NEXT I
QB 850 FOR R=1 TO 3
YX 860 FOR I=0 TO 14:SETCOLOR 4,3,I:SOUND
    0,80-I,10,8:NEXT I
KG 870 FOR I=14 TO 0 STEP -1:SETCOLOR 4,3
   ,I:SOUND 0,80-I,10,8:NEXT I
KA 880 NEXT R
RW 890 SOUND 0,0,0,0:RETURN
SH 997 REM
QG 998 REM  DRAW SCREENS 
SN 999 REM
TK 1000 ? #6;"          SSSSS         ";
GL 1010 ? #6;"                        ";
GO 1020 ? #6;"                        ";
LR 1030 ? #6;" ¬             ■#######";
ZI 1040 ? #6;" ¬             SSSSSSS";
FU 1050 ? #6;" ¬■##########C         ";
UM 1060 ? #6;" ¬SSSSSSSSSSS         ";
SP 1070 ? #6;" ¬                      ";
SS 1080 ? #6;" ¬                      ";
HJ 1090 ? #6;"                        ";
GK 1100 ? #6;"                        ";
KX 1110 ? #6;"           /            ";
EC 1120 ? #6;"     ■#############C    ";
CT 1130 ? #6;"     SSSSSSSSSSSSSS     ";
GW 1140 ? #6;"                        ";
GZ 1150 ? #6;"                        ";
HC 1160 ? #6;"                        ";
BA 1170 ? #6;"                       ¬";
BD 1180 ? #6;"                       ¬";
JV 1190 ? #6;"#######################¬";:RETU
   RN
GM 1200 ? #6;"                        ";
GP 1210 ? #6;"                        ";
LF 1220 ? #6;"####                    ";
WV 1230 ? #6;"SSS                     ";
HA 1240 ? #6;"              ¬ ¬       ";
RA 1250 ? #6;"      ■#########C¬      ";
UG 1260 ? #6;"      SSSSSSSSSS¬       ";
CL 1270 ? #6;"              ¬/        ";
HX 1280 ? #6;"              ■###      ";
YH 1290 ? #6;"              SSS       ";
GO 1300 ? #6;"                        ";
GR 1310 ? #6;"                        ";
OM 1320 ? #6;"   ■##################C ";
HR 1330 ? #6;"   SSSSSSSSSSSSSSSSSSSS ";
KG 1340 ? #6;"      S                 ";
KJ 1350 ? #6;"      S                 ";
YM 1360 ? #6;"S      S                ";
QH 1370 ? #6;"S                       ";
VM 1380 ? #6;" S                      ";
EW 1390 ? #6;" S######################";:RETU
   RN
GQ 1400 ? #6;"                        ";
XN 1410 ? #6;"              SSS       ";
SI 1420 ? #6;"  ¬                     ";
MN 1430 ? #6;"  ¬             /       ";
JC 1440 ? #6;" ¬SSS  ■###############";
VX 1450 ? #6;" ¬SSS  SSSSSSSSSSSSSSS";
SU 1460 ? #6;"  ¬                     ";
SX 1470 ? #6;"  ¬                     ";
TA 1480 ? #6;"  ¬                     ";
TD 1490 ? #6;"  ¬                     ";
GI 1500 ? #6;"  ¬            S   S    ";
BC 1510 ? #6;" ¬■##########S    S    ";
PQ 1520 ? #6;" ¬SSSSSSSSSSSSS     S   ";
QV 1530 ? #6;"  ¬            S   S    ";
IO 1540 ? #6;"                      S";
IR 1550 ? #6;"                      S";
IU 1560 ? #6;"                      S";
IX 1570 ? #6;"                      S";
IO 1580 ? #6;"        S       S    S";
DF 1590 ? #6;"SSS###################S";:RETU
   RN
GU 1600 ? #6;"                        ";
GX 1610 ? #6;"                        ";
HA 1620 ? #6;"                        ";
IR 1630 ? #6;"           HI THERE     ";
HG 1640 ? #6;"                        ";
HJ 1650 ? #6;"                        ";
GM 1660 ? #6;"¬ ¬                     ";
GP 1670 ? #6;"¬ ¬                     ";
MS 1680 ? #6;"¬ ¬               SSS   ";
PD 1690 ? #6;"¬ ¬         /           ";
KO 1700 ? #6;"¬     ##########        ";
DH 1710 ? #6;"¬     SSSSSSS           ";
UQ 1720 ? #6;"¬                       ";
QM 1730 ? #6;"¬                ■#######";
QM 1740 ? #6;"¬ ¬              SSSSSS";
XL 1750 ? #6;"SSS                     ";
XU 1760 ? #6;"          ■#########C   ";
LN 1770 ? #6;"          SSSSSSSS      ";
HU 1780 ? #6;"                        ";
MW 1790 ? #6;"■#########C             ";:RETU
   RN
KR 3897 REM
NI 3898 REM  NEW LIFE 
KZ 3899 REM
TH 3900 RESTORE 3990
FG 3910 FOR I=1536 TO 1539:READ A:POKE I,
   A:NEXT I
ID 3920 CRFLG=0:FW=0
QL 3930 POKE 53248,PEEK(1536):POKE 704,13
   4
HY 3940 PL=PMBASE+512+PEEK(1537)
LI 3950 RESTORE 6100
KV 3960 FOR I=PL TO PL+7:READ A:POKE I,A:
   NEXT I
```

continued ☛

DROIDZ

```
PR 3970 HI=INT(PL/256):LO=PL-HI*256
ES 3980 POKE 204,LO:POKE 205,HI:POKE 1538
   ,1:RETURN
DH 3990 DATA 50,14,0,0
KT 3997 REM
QN 3998 REM  INITIALISE
LB 3999 REM
NV 4000 GOSUB 5400:RTFLG=1:GOSUB 4800:RTF
   LG=0
CK 4010 GOSUB 5000:POKE 1538,0:A=USR(2457
   6)
ZO 4020 GOSUB 5200
AV 4025 GOSUB 5300
HK 4030 PMP=PEEK(106)-8:PMBASE=PMP*256
ZR 4040 POKE 106,PMP
JW 4050 GRAPHICS 17
PW 4060 CHP=PMP+4:CHBASE=CHP*256
HR 4070 POKE 54279,PMP
EC 4080 A=USR(ADR(RELOCATE$),CHBASE)
ZX 4090 GOSUB 4200
FT 4100 RESTORE 6110:FOR I=0 TO 7:READ A:
   POKE 1558+I,A:NEXT I
ZR 4110 RESTORE 4190:FOR I=1538 TO 1544:R
   EAD A:POKE I,A:NEXT I
YJ 4120 DIM NUM$(3):NUMSCR=4:MAXSKIP=0:SK
   IP=0:SKILL=1:SCORE=0:HISCORE=0
RQ 4130 POKE 623,8
AQ 4140 RETURN
KS 4190 DATA 0,0,250,14,88,48,200
KE 4197 REM
JR 4198 REM  REDEFINE CHARACTERS
KM 4199 REM
LP 4200 RESTORE 4230
CO 4210 FOR I=24 TO 71:READ A:POKE CHBASE
   +I,A:NEXT I
WX 4220 RESTORE 6100:FOR I=72 TO 79:READ
   A:POKE CHBASE+I,A:NEXT I:RETURN
FV 4230 DATA 255,255,231,195,195,231,255,
   255
TI 4240 DATA 195,102,60,24,24,60,102,195
BL 4250 DATA 60,60,60,0,60,60,60,0
WG 4260 DATA 126,67,67,127,38,36,36,126
DB 4270 DATA 1,3,6,12,24,48,96,192
QY 4280 DATA 128,192,96,48,24,12,6,3
KI 4397 REM
XL 4398 REM  BEGIN GAME
KQ 4399 REM
UD 4400 SCREEN=1+SKIP:LIVES=3:SCORE=0:FW=
   0
DC 4410 GRAPHICS 17:POKE 756,CHP
AP 4420 POKE 559,46:POKE 53277,3
VL 4430 SETCOLOR 0,3,4:SETCOLOR 1,1,6:SET
   COLOR 2,9,8:SETCOLOR 3,5,8
HQ 4440 POKE 1540,250
AZ 4450 RETURN
KK 4497 REM
FW 4498 REM  DISPLAY BLOBS
KS 4499 REM
TY 4500 POKE 1538,0
LV 4505 POKE 1536,50:POKE 1537,14:POKE 15
   38,0:CRFLG=0
VT 4510 A=USR(ADR(CLEAR$),PMP+2,PMP+3)
NE 4520 RESTORE 5990+SCREEN*10
JX 4530 FOR B=0 TO SKILL-1
RW 4540 READ MIN:POKE 1551+B,MIN
YM 4550 READ MAX:POKE 1554+B,MAX
SE 4560 READ Y:PL=PMBASE+640+B*128+Y
EV 4570 D=INT(RND(0)*2)
DS 4580 POKE 1548+B,D
KA 4590 IF D=0 THEN POKE 1545+B,MAX:POKE
   53249+B,MAX
CQ 4600 IF D=1 THEN POKE 1545+B,MIN:POKE
   53249+B,MIN
GS 4610 POKE 705+B,INT(RND(0)*16)*16+6
MB 4620 FOR I=0 TO 7:POKE PL+I,PEEK(1558+
   I):NEXT I
CO 4630 NEXT B
VC 4640 POKE 1538,1
BD 4650 RETURN
KO 4697 REM
YD 4698 REM  NEW SCREEN
KW 4699 REM
YZ 4700 ? #6;"K";:GOSUB 800+SCREEN*200
TG 4710 POSITION 0,20:? #6;"score       fue
   l"
XX 4720 POSITION 0,22:? #6;"screen"
PF 4730 POKE 1557,SKILL:NUM$="000"
MC 4740 NUM$(4-LEN(STR$(SCORE)))=STR$(SCO
   RE)
NT 4750 POSITION 6,20:? #6;NUM$
CX 4760 POSITION 8,22:? #6;SCREEN
VT 4770 IF LIVES=0 THEN RETURN
OE 4780 FOR I=1 TO LIVES
MN 4790 POSITION 19,19+I:? #6;"]":NEXT I:
   RETURN
KQ 4797 REM
ET 4798 REM  TITLE SCREEN
KY 4799 REM
TB 4800 POKE 1538,0:FOR I=53248 TO 53251:
   POKE I,0:NEXT I
WW 4810 GRAPHICS 18:SETCOLOR 0,11,8:SETCO
   LOR 1,7,8:SETCOLOR 2,0,0
VB 4830 DL=PEEK(560)+256*PEEK(561)
AU 4840 POKE DL+6,128:POKE DL+10,2:POKE D
   L+12,6
RD 4850 FOR I=14 TO 16:POKE DL+I,6:NEXT I
KK 4860 POKE 207,80:POKE 208,16:POKE 5428
   6,192
RM 4870 POSITION 7,1:? #6;"droidz"
XZ 4880 POSITION 9,4:? #6;"written by Joh
   n Young"
XU 4885 IF RTFLG THEN RETURN
BW 4890 IF SCORE>HISCORE THEN HISCORE=SCO
   RE
SW 4900 POSITION 0,7:? #6;"score ";SCORE:
   POSITION 10,7:? #6;"hi ";HISCORE
LW 4910 POSITION 0,9:? #6;"OPTION     skip
       ";SKIP
YC 4920 ? #6;"SELECT     level    ";SKILL:?
   #6;"START      begin"
BG 4930 C=PEEK(53279)
NZ 4940 IF C=3 THEN GOSUB 4980:SKIP=SKIP+
   1:IF SKIP>MAXSKIP THEN SKIP=0
BR 4950 IF C=5 THEN GOSUB 4980:SKILL=SKIL
   L+1:IF SKILL>3 THEN SKILL=1
OB 4960 IF C=6 THEN GOSUB 4980:RETURN
UC 4970 GOTO 4910
BL 4980 FOR I=100 TO 80 STEP -2:SOUND 0,I
   ,10,6:NEXT I
YW 4990 SOUND 0,0,0,0:RETURN
KU 4997 REM
KO 4998 REM  READ IN VBI M/C
LC 4999 REM
KW 5000 RESTORE 5030
QX 5010 FOR I=0 TO 288:READ A:POKE 24576+
   I,A:NEXT I
AJ 5020 RETURN
OJ 5030 DATA 104,160,11,162,96,169,7,32,9
   2,228,96,173,2,6,240,81,173,132,2,208,
   18,173,3,6,208
DK 5040 DATA 13,173,4,6,240,8,173,1,6,205
   ,5,6,208,89,169,0,141,1,210,173,4,208,
   41,1,208
OU 5050 DATA 8,173,1,6,205,6,6,208,118,16
   9,0,141,3,6,173,120,2,41,4,208,8,173,0
   ,6,205
MQ 5060 DATA 7,6,208,125,173,120,2,41,8,2
   08,8,173,0,6,205,8,6,208,122,32,228,96
   ,76,98,228
CQ 5070 DATA 173,12,208,208,245,173,4,208
   ,201,1,240,11,201,9,208,234,173,4,6,20
   1,250,208,227,141,30
DK 5080 DATA 208,240,222,169,40,141,0,210
   ,169,8,141,1,210,206,4,6,206,1,6,173,4
   ,208,201,1,240
```

DISK BONUS

PINBALL!

by Chris Guise



For the first time our bonus comprises of a couple of excellent pinball games created with the famous Pinball Construction Set. The format will be familiar to many readers but the games, nevertheless, remain quite addictive and can be played by up to four players.

The games are selected from a menu (400/800 owners must use DOS option L) and are played with a joystick in port 1. The number of players can be selected before a game commences by using the OPTION or SELECT key and the ball release and flippers are operated by the joystick.

WARNING! These games can become quite addictive!

HOW TO GET THE DISK

The NEW ATARI USER issue disk with all the programs from this issue and the BONUS is sent automatically to disk subscribers but is also available separately for just £2.95 inclusive. Drop us a cheque or Postal Order or give us a ring with your credit card details. Write to PAGE 6, P.O. Box 54, Stafford, ST16 1DR or telephone 0785 213928

DROIDZ

```
FC 5090 DATA 21,201,9,240,17,160,1,198,20
   4,177,204,136,145,204,200,200,192,10,1
   44,245,176,143,141,30,208
KV 5100 DATA 240,234,238,3,6,238,1,6,160,
   7,177,204,200,145,204,136,136,16,247,2
   00,169,0,145,204,230
DX 5110 DATA 204,76,64,96,206,0,6,173,0,6
   ,141,0,208,24,144,140,238,0,6,173,0,6,
   141,0,208
FK 5120 DATA 24,144,128,162,0,189,12,6,24
   0,19,189,9,6,221,18,6,240,6,254,9,6,24
   ,144,27,169
DW 5130 DATA 0,157,12,6,189,9,6,221,15,6,
   240,6,222,9,6,24,144,8,169,1,157
AX 5140 DATA 12,6,254,9,6,189,9,6,157,1,2
   08,232,236,21,6,208,198,96
KF 5197 REM
MJ 5198 REM  READ IN CLEARING M/C
KN 5199 REM
DC 5200 DIM CLEAR$(31):RESTORE 5230
XZ 5210 FOR I=1 TO 31:READ A:CLEAR$(I,I)=
   CHR$(A):NEXT I
AN 5220 RETURN
DY 5230 DATA 104,104,104,133,205,104,104,
   133,206,169,0,133,204,160,0,145,204,13
   6,208,251,230,205,166,205,228
KB 5240 DATA 206,240,243,144,241,96
KH 5297 REM
GO 5298 REM  READ IN CHSET RELOCATE M/C
KP 5299 REM
IC 5300 DIM RELOCATE$(34):RESTORE 5330
```

```
TR 5310 FOR I=1 TO 34:READ A:RELOCATE$(I,
   I)=CHR$(A):NEXT I
AP 5320 RETURN
YC 5330 DATA 104,104,133,207,104,133,206,
   169,0,133,204,169,224,133,205,162,4,16
   0,0,177,204,145,206,136,208
ZN 5340 DATA 249,230,205,230,207,202,208,
   242,96
GW 5398 REM  READ IN TITLE SCREEN M/C
KR 5399 REM
TQ 5400 DIM FX$(37):RESTORE 5440
JX 5410 FOR I=1 TO 22:READ A:FX$(I,I)=CHR
   $(A):NEXT I
DU 5420 HI=INT(ADR(FX$)/256):LO=ADR(FX$)-
   HI*256
TV 5430 POKE 512,LO:POKE 513,HI:RETURN
HH 5440 DATA 72,165,207,141,10,212,141,25
   ,208,56,233,2,198,208,208,243,169,16,1
   33,208,104,64
UG 5999 REM ---BLOB POSITIONS---
RD 6000 DATA 72,176,84,88,168,56,80,136,2
   8
NW 6010 DATA 64,200,84,72,184,56,88,128,2
   8
XI 6020 DATA 80,192,84,80,144,52,120,200,
   24
LM 6030 DATA 88,136,48,166,200,60,56,96,8
   4
MI 6099 REM ---PLAYER DATA---
CG 6100 DATA 0,60,90,126,231,255,126,42
UH 6110 DATA 0,0,60,90,255,153,195,126
```

THE A-Z OF GOLDEN (AND NOT SO GOLDEN) OLDIES continued

LOCO ★ ★ ★
arc Alligata 1987 (t) bud

A horizontally scrolling game in which you're in charge of a locomotive despatching rail trucks coming toward you, and helicopters flying above you. You also have the choice of changing tracks at junctions which are dotted about. 'Loco' features some pleasing graphics and superb music. Put simply, it's a good shoot 'em up featuring a train instead of a spaceship.

LODE RUNNER ★ ★ ☆
plat Broderbund 1983 (d,r) full

A challenging platform game with some of the smallest sprites ever. You traverse platforms, climb ladders and blast holes for the villains to fall through. Your objective is to collect enough jewels to open up the exit to the next level. 'Lode Runner' is a game where the right strategy is just as important as being nimble with the joystick. Recommended for the platformers among you.

THE KEY

Star Ratings:-

★	poor
★ ☆	poor/mediocre
★ ★	mediocre
★ ★ ☆	mediocre/good
★ ★ ★	good
★ ★ ★ ☆	good/excellent
★ ★ ★ ★	excellent

arc	arcade game
plat	platform game
sim	simulation
strat	strategy game
adv	text adventure
gr adv	text adventure with pictures
frp	fantasy role playing game
arc/adv	arcade game with puzzle solving/mapping etc.

(t)	game is available on tape
(d)	game is available on disk
(r)	game is available on ROM cartridge
bud	budget priced game (£1.99-£2.99)
mid	mid-priced game (£3.00-£8.99)
full	full priced game (£9.00+)
imp	game is (or was) only available on import from America
scarce	no price range available, because game is very difficult to get hold of

The price and format (tape, disk etc.) ranges quoted are intended as guidelines only. Games which were originally available on tape and disk can now be found on cartridge and vice-versa. This can also alter the price of the game in question.

LORDS OF CONQUEST ★ ★ ☆
strat Electronic Arts 1986 (d) full

Generally quite pleasing game of world domination, along the lines of boardgames such as 'Risk' and 'Diplomacy'. Graphics (blocky maps) and sound effects are pretty basic, but in the gameplay stakes this one scores pretty highly.

MACHINE CODE TUTOR ★ ★ ★
ut New Generation Software 1984 (t) scarce

A straightforward instruction program which guides you through the basics of 6502 Machine Code (the 6502 is the microprocessor at the heart of the XL/XE). The program is broken up into four lessons, each with its own subdivisions. A particular piece of information can be called up at the press of a few keys. Also included is an assembler for the machine code programs you will write. A good, no frills instruction programme.

MASK OF THE SUN ★ ★ ★ ☆
gr adv Broderbund 1982 (d) imp/ scarce

This illustrated text adventure is in the style of the 'Indiana Jones' movies. It's set in Mexico and has you searching for the mask of the title in pyramids, caverns and jungle. You'll meet many characters along the way who add to the atmosphere of the adventure. Exciting and involving, with three double-sided disks of data. Has anybody got the sequel, 'Serpent's Star'?

MASTER OF THE LAMPS ★ ★ ★
arc Activision 1985 (d) imp/ scarce

Weird game in which you guide a chap on a magic carpet through rings until he reaches a screen where a genie sits playing musical notes. You must then play back to the genie exactly the same notes or you start from the beginning again. Highly original, with its main appeal lying in the 3-D magic carpet sequence and the wonderful musical soundtrack.

MASTERCHESS ★ ★
sim Mastertronic 1986 (t) bud

A reasonable attempt at computer chess. Graphics are in unusual shades of grey, yellow and black. You can save and load games, set difficulty levels, adjust the positions of pieces and have an action replay of the game. There is no two player option, so it's up to you to challenge the computer.

MEDIATOR ★ ★ ★
arc/adv English Software 1985 (t,d) mid

A highly unusual game involving elements of shoot 'em up, platform and puzzle solving. It's also one of those games where you have to experiment to find out exactly what you must do. Some of the screens require a combination of careful thought and accurate joystick control. Graphics and sound are of a high standard throughout.

MERCENARY ★ ★ ★ ★
arc/adv Novagen 1985 (t,d) mid

Programming genius Paul Woakes' terrific game was literally in a class of its own. Played in real time, you can walk or travel in various craft through a three dimensional wire-frame world. Part adventure, part flight simulator, part shoot 'em up, it is one of those few games where a triumph of programming technique walks hand in hand with terrific gameplay. If you haven't got 'Mercenary', then WHY not?

compiled by Kirk Ruebottom

MICRO RHYTHM ★ ★ ☆
ut Two Bit Software/Firebird 1986 (t) bud

This is a program which transforms your computer into a drum machine. Key presses turn on or off sound effects representing snare drums, hi-hat, cow bell, tom-tom and clap. You can string short pieces together to make a complete song. Obviously, the strength of this type of program lies in the quality of the drum sounds reproduced, and its general ease of use. 'Micro Rhythm' scores fairly good on both counts.

MIG ALLEY ACE ★ ★ ☆
arc Microprose 1984 (t,d) mid

A flight simulator which features more arcade action than most. The game uses a split-screen technique, each player having his own view from his cockpit. Dogfights are the order of the day with joystick moves controlling diving, turning and climbing. Fairly exciting, but the rudimentary graphics don't help things much.

MILLIPEDE ★ ★ ☆
arc Atari 1983 (r) mid

Fast moving shoot 'em up in which millipedes grow ever larger and move ever nearer the bottom of the screen. It's up to you to shoot them as soon as possible. Graphics are functional, but gameplay is great. Shoot 'em up fiends should like this one.

MILK RACE ★ ★ ☆
arc Mastertronic 1987 (t) bud

A frustrating bike racing game in which you travel over all the stages of the famous Milk Race event. It's a horizontal scroller, showing the cyclists, road, scenery and crowd from a side-on view. Your progress depends on how well you use your bike's 12 gears over the gradients and slopes of the course. Graphics could have been better, but they are acceptable. The title page and music effects are neatly done.

MINER 2049'er ★ ★ ★
plat Big Five Software 1982 (r) mid

The excellent 'Bounty Bob Strikes Back' was the sequel to this innovative, much copied platform game. You have to time Bob's leaps and make sure he fills in every portion of each platform before you can progress to the next level. A professionally designed game, with equal levels of difficulty, fun and addictiveness.

MINI OFFICE 2 ★ ★ ★ ★
ut Database Software/Page 6 1987 (d) full

Pleasing collection of valuable utilities, comprising word processor, label maker, spreadsheet, database, graphics and comms module. The most incredible thing about this package is the value. All of the programmes are written to a high standard into the bargain!

MIRAX FORCE ★ ★ ★
arc Tynesoft 1988 (t,d) mid

An impressive-looking shoot 'em up from the prolific Geordie software house. 'Mirax' features some high quality digitised speech and graphics. You blast your way, 'Uridium' style, across a horizontally scrolling backdrop of a huge alien mothership. Difficult, but a rewarding experience for lovers of this type of game.

MISSILE COMMAND ★ ★ ☆
arc Atari 1981 (r) mid

A no-frills conversion of the old arcade game where you have to defend your cities from the ever oncoming nuclear missiles. Whether you like this or not will depend on how much you liked the arcade original. An exercise on how to program the Atari it is not. A fun, unadulterated shoot 'em up it is.

MISSING: ONE DROID ★ ★
arc Bug Byte 1987 (t) bud

Renowned Atari programmer, Paul Lay must have written this when he had an evening to spare. The whole game takes up around 5K of memory or so. You control a droid who fires in eight directions at the hordes of nasties which appear and move all over the screen. Much better done then the similar 'Duellin' Droids', but there's no denying that it's a pretty shallow game, amusing at first but eventually tedious.

MOLECULE MAN ★ ★ ☆
arc/adv Mastertronic 1987 (t) bud

This game occupies an enormous amount of tape because it also contains a maze construction set for use with the game. You guide what looks like a golf ball with legs through a maze of 256 locations looking for such objects as coins, vending machines and teleporter circuits. The game is played against the clock. Graphics are monochrome, but highly detailed. There is nothing particularly special about 'Molecule Man', but there is nothing particularly wrong with it either.

MONKEY MAGIC ☆
arc Micro Design 1987 (t) bud

Avoid at all cost!

MOON PATROL ★ ★ ★
arc Williams Electronics /Atari 1982 (r) mid

A horizontally scrolling game in which you move a moon buggy over a landscape filled with craters, blast the aliens, and avoid oncoming obstacles. Yes, it's all been done before I know, but this one is pretty to look at and it plays very well too.



MONTEZUMA'S REVENGE ★ ★ ★ ☆
plat Utopia Software/Databyte 1986 (t,d) mid

An utterly charming platforms and ladders game in which you control a cute little sprite called Monty through 100 rooms in his quest for ancient artifacts. There are many different types of nasties including rolling skulls, spiders and snakes, all of them well animated. Some of the traps are very ingenious and the whole game is one of perfect timing of leaps and jumps. A treat.

MR. DIG ★ ★ ☆
arc Microdeal 1984 (t) scarce

Probably the best Microdeal game for the Atari (although that isn't saying much). This is a conversion of the old 'Mr Do' arcade game. Graphics are O.K. and humorous in parts, and the sound, whilst being of a good standard, could grate on you after a while.

MR ROBOT AND HIS ROBOT FACTORY ★ ★ ★
plat Datamost/Databyte 1983/1986 (t,d) mid

A neat platforms and ladders game with some original touches. Along with the standard jumping, climbing and disposing of nasties there are such things as transporters, trampolines, bombs and slides. The programmer has crammed tons of colour onto the screen using display list interrupts and he has also included a 'design your own screens' facility. One of Ron Rosen's best games (and he has written quite a few).



A-Z OF ATARI SOFTWARE

M.U.L.E. ★★★★
strat Electronic Arts/Ariolasoft 1983 (t,d) scarce

Definitely one of the best releases from the E.A./Ariolasoft stable in the mid eighties. The game can be described as a form of 'Monopoly' on another planet but with even better gameplay and some superb humour. Graphics and sound are very good throughout and up to four people can play at the same time. A classic of its kind, and more importantly, an example of the perfect computer game.

MURDER ON THE ZINDERNEUFF ★★★
strat Electronic Arts/Ariolasoft 1984 (d) mid

You play the part of a detective who must solve a murder on board the Zinderneuff airship. The game screen provides a four way scrolling birds-eye view of the airship with various sprite characters going about their business inside. You move your detective and approach the suspects to ask questions. From their replies, and by searching rooms for clues you must solve the murder. The game is completely joystick controlled and the murder cases are always different. Altogether original and refreshing, with some glorious characters and great atmosphere.

NECROMANCER ★★★
arc Broderbund/Synapse 1982 (t,d) scarce

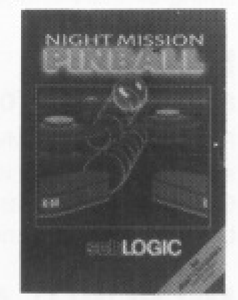
An unusual game which is guaranteed to make your joystick hand ache. The game takes place over three distinct phases. In phase one you move your wisp over the screen to stop ogres from eating the trees you are planting. In phase two you move your trees over the larvae pits of the Necromancer's spiders before they hatch. In phase three you meet the Necromancer and you try to destroy his graves and the spiders you did not kill in phase two. Colourful graphics and neat sound effects, as well as unique gameplay make 'Necromancer' a winner.

THE NEVERENDING STORY ★★★
gr adv Datasoft 1986 (d) imp/scarce

A fantasy adventure with some excellent graphics, based on the film of the same name. You may have some trouble getting your inputs understood due to the limitations of the game's parser, but don't be put off because this adventure is worth persevering with. The music, by Gary Gilbertson, is up to his usual excellent standard.

NIGHT MISSION PINBALL ★★☆
arc Sublogic 1982 (d,t) imp/scarce

A computer pinball machine with some weird sound effects and, unfortunately, artifacted colours. As well as giving you a good game of pinball, this program allows you to control some of the parameters, such as ball speed, scoring etc. It's fairly well done, but not as good as 'Pinball Construction Set'.



NINJA ★★★☆
arc Mastertronic 1986 (t) A bud

A well-done martial arts game which could easily have been released at full-price without raising any eyebrows. You play the title role, kicking, punching, chopping and leaping your way through many nicely drawn screens in search of six idols. Animation is quite good throughout (although not up to the standards of 'Karateka' or 'International Karate'). Altogether, one of the best budget releases for the Atari.

NINJA MASTER ★☆
arc Firebird 1987 (t) bud

Not a martial arts game as such, rather a test of hand-eye co-ordination as you guide your ninja through a series of tests. A couple of these tests involve hitting oncoming objects. Another has you waggling the joystick as fast as you can, and the last involves a blowpipe and bursting balloons! Graphics and sound are on a pretty basic level. The game has an addictive quality, but as an exercise in programming it leaves much to be desired.

NUCLEAR NICK ★★☆
plat Americana/U.S. Gold 1986 (t,d) mid

This is another in the long line of platform games from prolific programmer Ron Rosen. It's pretty standard stuff with you jumping and killing baddies etc. There are twenty different screens in all, and the graphics are good enough to lift it above the run of the mill.

OLLIES FOLLIES ★★☆
plat American/U.S. Gold 1986 (t,d) bud

A twenty four screen, archetypal platform game with O.K. graphics and a certain amount of addictiveness. It's much in the same vein as 'Nuclear Nick' or 'Beer Belly Burt', but at the price represents nice value for money.

ON CUE ★★
sim Mastertronic 1987 (t) bud

This is remarkably similar to the earlier 'Steve Davis Snooker'. As well as the snooker program, Mastertronic have included a version of Pool. All the usual features are here (power, spin, choice of opponents and nine difficulty levels). Altogether another average attempt at putting snooker onto computer.

180 ★★★
arc Mastertronic 1987 (t) bud

Another darts simulation, this time requiring 64K of memory to run. You have the option of playing either a friend or the various computer opponents at '501'. The graphics for the dartboard and moving hand (which you have to guide with the joystick) are very good. If you manage to score a maximum, then you hear a digitised yell of '180!' from your T.V. speaker.

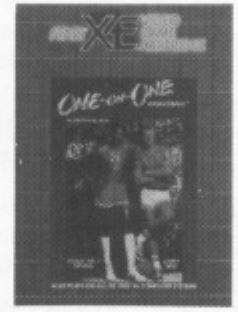


ONE MAN AND HIS DROID ★★
arc Mastertronic 1986 (t) bud

A weird game which takes place in a side-on view of a maze of tunnels and passages. Moving your droid, you must locate all the lost 'sheep' (colourful alien-looking sprites), and guide them to a pen located somewhere in the maze. I suppose it's a sort of futuristic 'One Man and His Dog' (hence the title). Music plays constantly throughout and it can become quite irksome.

ONE ON ONE ★★☆
arc Electronic Arts/Ariolasoft 1984 (t,d,r) mid

'one on one' basketball simulation which is fairly well done. You take the part of either Larry Bird or Dr. J. (real American basketball players), and you can play against a friend or the computer. As well as moving your player around the court you can block, jump, spin round, shoot and tackle. The animation of the two players is above average and it turns out to be quite an enjoyable game. Watch out for the slow motion replays, fouls and slam dunks.



OPERA HOUSE/QA ★ ★
adv Bignose Software 1985 (d) bud

Two text adventures on one disk. The first casts you as a Prima Donna searching the Paris Opera House for the (in)famous phantom who is out to wreck your opening night. The second is an Indian Jones type affair where you are up to your neck in jungles, natives and quicksand. They're reasonably entertaining, but a bit short on vocabulary and location descriptions.

PACMAN ★ ★ ☆
arc Datasoft/U.S. Gold 1984 (t,d,r) mid

Competent conversion of the incredibly popular arcade game of the early 80's. All the features of the original are here, but whether 'Pacman' still holds interest for more modern tastes is open to question.

PANIC EXPRESS ★ ★ ☆
arc Red Rat 1986 (t,d) mid

In this horizontally scrolling game, you are a guard who must make his way from the rear of a train to the engine in order to stop it and avert disaster. Many obstacles (helicopters, smoke, cloud) hamper your progress, and these must all be avoided. Graphics are on the weak side, but when the gameplay is this good, who's complaining?

PANIK! ★ ☆
plat Atlantis 1987 (t) bud

Uninteresting 'Lode Runner' derivative which has you running up and down ladders, across platforms, and digging holes to trap monsters. Graphics are a basic four colour job, and the sound is not very imaginative either. Even at the price, this one is not worth considering.

PANTHER ★ ★ ☆
arc Mastertronic 1987 (t) bud

Tricky, diagonally scrolling shoot 'em up in the vein of 'Blue Max'. This is almost the game 'Blue Max 2001' should have been. You have to rescue stranded pilots as well as cope with the alien craft which swoop on you from all sides. Fairly good graphics and addictive gameplay.

PAWN, THE ★ ★ ★ ☆
gr adv Rainbird Software 1987 (d) full

This famous adventure finds you in the mythical land of Kerovnia with a mysterious silver band around your arm. You take it from there, and the story unfolds as you play the game. 'The Pawn' comes on two disks, has numerous pictures to accompany its reams of descriptive text, and probably has the best adventure parser written for 8-bit machines.

PAYOFF, THE ★ ★ ☆
adv Bignose Software/Atari 1985 (t,d) mid

A text adventure which is strong on atmosphere but has a somewhat limited vocabulary. The seedy storyline takes place over city streets and inside various buildings. Your objective is to recover a large diamond to enable you to pay off all your debts.

PHANTOM ★ ★ ☆
arc Tynesoft 1987 (t,d) mid

'Phantom' could be described as a sort of 'Ghostbusters' meets 'Gauntlet'. The ghost busting side of things is here, but it all takes place in 'Gauntlet' like passageways. A nice feature is the BPM indicator (your heart rate in beats per minute). If you bump into two many ghosts this increases until it reaches 100, then it's game over. Generally, a very professional product.

PHARAOH'S CURSE ★ ★ ☆
arc adv Synapse 1982 (t,d) imp/scarce

An interesting little arcade adventure which has you running and jumping through a pharaoh's tomb in search of ancient artifacts. Elements of platform, shoot 'em ups and puzzle solving blend together well here, but the whole thing is let down by some weak graphics.

PHARAOH'S PYRAMID ★ ★ ★
arc Master Control Software 1983 (t) imp/scarce

Probably the best of the numerous 'Q-Bert' clones for the Atari. In case you missed 'Q-Bert', it's the one where you have to jump around a triangle shape of cubes and turn them all the same colour. Each level completed in this variant means another stone has been laid for the Pharaoh's pyramid. There is a good selection of nasties to be avoided and the screens are teeming with colour.

PINBALL CONSTRUCTION SET ★ ★ ★
arc Electronic Arts/Ariolasoft 1983/1985 (d) full

A pinball construction set is exactly what this piece of software is. You can create and edit everything from the shape of the table, through to the position of flippers, scoring bonuses, ball catchers etc. Trying to mention all of the features of this brilliantly designed game in such a short space is impossible. However, there is one drawback. We unfortunate P.A.L. T.V. set owners can only obtain monochrome graphics due to the programmer's use of American artifacting to obtain colour.

PITFALL 2 ★ ★ ★
arc Activision 1984 (t,r) mid

This si a running, jumping and climbing game set over a multitude of scrolling, colourful screens. Map making may be called for because the area you have to search over is very large. Monkeys, birds, snakes and many other creatures are all out to stop you, so you'll have to time those leaps perfectly. Competent and imaginative programming are quite evident in 'Pitfall 2'.

PIRATES OF THE BARBARY COAST ★ ★ ★
strat Starsoft/Cascade 1987 (d) mid

I'll swim against the critical tide and admit that I really like this one. Most critics hated this game because it did not live up to the mega-game status everyone expected when they saw the advance Atari ST screenshots. Let's face it, this turned out to be a good trading/strategy/shoot 'em up game, ESPECIALLY on the XL/XE.

PITSTOP ★ ★ ☆
arc Epyx 1983 (r) scarce

A motor racing game with an angled bird's eye view of the course and 3-D pitstop scenes. Your car is simple to control, being just forward and backward movements of the joystick. In the pitstop scene you must change damaged tyres and refuel the car. Overall, nothing particularly special, but it's not a bad racing game by any means.

PITSTOP 2 ★ ★ ★
arc Epyx 1984 (d) full

This improved sequel took a long time to be released here in Britain. In this split-screen affair you can either race against a friend or the computer over six different tracks. The view (from behind your car) is also an improvement over the original. The pitstop scenes are still here, and they are as good as in 'Pitstop 1'.

MORE NEXT ISSUE

THE XE AND THE PORTFOLIO

and other interesting stories - by Kit Lethby

In Issue 46 there was a letter concerning transferring information to and from the Atari Portfolio and I thought other readers might like to share my experiences.

I have been using a Portfolio with my XE for over a year now and have had very successful results when transferring data. Before I go into the details there is one thing that needs to be clarified from the reply to the original letter. Yes, the Portfolio does have a comms package built in, BUT it will only work when the Parallel Interface is connected and is communicating with an IBM compatible machine. When communicating with the Atari one must use the Serial Interface, a connector to change the 9 pin output to 25 pin output, a null modem, and a suitable cable to connect the Portfolio to the Atari. I use one that was made in Australia, but the people who made it inform me that the P.R. Connection should also work. Regarding software I use a Shareware program called MEGATERM 2, which is not currently available in the U.K. but which should shortly be available as Shareware through Page 6. I have not tried Amodem or Kermit, but intend to in the future, I'll keep you informed of the results.

The Portfolio also has to have different software. There are two good PD programs which I gained from Atari, Australia, who I must say have been great in assisting me with software for the Portfolio. The best program is Xterm 2, but Acom will also successfully transfer the files. A filename has to be given at both ends or the Capture Mode can be used on one end. Occasionally the Portfolio locks up if one is using other PD programs and therefore it is necessary to Cold Start it and naturally, one loses all the files on the built in C: Drive. It is therefore advisable to have a Ramdisk Card so that Xterm does not get wiped out. Of course, Xterm has to be downloaded into the computer and one will have to find a kind dealer who is prepared to do this through an IBM machine.

For this you need the Parallel Interface (the software for the IBM comes with it) and necessary cables, which can also be used to printout documents to a Centronics Printer. Alternatively, It could be put straight onto a Ramcard, but again Atari or a supplier would have to do this. Maybe the Silica Shop can help?

Atari have supplied me with numerous PD programs for the Portfolio - Chess, Basic, Othello, etc. which I download and store in Atari format onto my 1050 Disk Drive. All files are usually successfully transferred with the exception of very long programs over 45K, which need to be transferred in more than one part. A PD program has also been written which enables the user to connect a small portable battery operated 3.5 inch floppy disk drive produced 5/6 years ago, and which has now been re-released by Tandy called the PDD2. It can be connected to the Portfolio via one of the interfaces and formatted to hold 200k of data per disk. I have not acquired one yet, but do intend to and again will keep you informed about it.

I hope this has been of some help to those interested in acquiring a Portfolio, I've found it to be a great little machine, but had it not been for the backup that Atari, Australia have given me, could have found the whole thing very frustrating. All in all, it was quite a costly venture and set me back approximately $1120 - over £500.

Here is a run down of the costs. Prices have been converted from Australian dollars at the exchange rate of 2 dollars to the pound.

Portfolio	£247.50
Megaterm Cable and software	£ 60.00
Parallel Interface	£ 45.00
Serial Interface	£ 60.00
Cable for Parallel Interface	£ 12.50
Null Modem	£ 5.00
9 pin/25 pin Connection	£ 5.00
128k Ramdisk Card	£125.00

Total	£560.00

CONNECTING UP

On to another subject now for those who have more than one computer. I recently built an interface, which enables me to connect my two XE computers to one 1050 Disk drive, as well as the cassette, printer switch box (one lead for the XE, one for the Portfolio), the RS232 connection (to the Portfolio, and a spare just for the Hell of it! This enables me to switch the drive between the two computers, working on one while the other is loading. Someone can play on one while another person is working on the other, one can printout while the other is accessing the disk drive etc. It started out as a 'Can I do it' project and ended up being very successful and I use it far more than I ever expected. It also saves so much unplugging and 'wear and tear' on the sockets. I am prepared to write an article on how it is done, but as it would be quite time consuming how about readers letting me know if they are interested before I put pen to paper? It was remarkably easy to do and as I've never done a thing with electronics before, I'm sure anyone could have a go.

For those that like to dabble, here are a few tips on how it is done. All one has to do basically is make up a double cable and run it from the disk drive to the 2 computers and put a switch between pin 7 & 10 so that the computers don't know that each other are there. Well, that isn't quite all of course as the disk drive and printer will only be available to one computer at a time, hence the need for a proper interface. If you're interested in the article then let me know.

SOME TIPS

Here are a few tips that readers may have forgotten about.

-- when using Turbo Basic: If you go to DOS instead of rebooting or loading AUTORUN.SYS, hit M, type 2080 and you'll find yourself straight back in Turbo Basic.

```
WO 1 REM ******************************
QZ 2 REM * CRYSTALS - author unknown  *
SP 3 REM * -------------------------- *
GD 4 REM *  NEW ATARI USER - Dec '91  *
WS 5 REM ******************************
PF 10 GOSUB 9000
RJ 15 DEG :RA=12:I=RA/2
ID 20 DIM Q(80),W(80),E(80),R(80)
HO 30 POKE 77,0
ZF 143 A1X=150:A2X=150:A1Y=95:A2Y=95
DB 144 F1=RA*RND(1)-I:F2=RA*RND(1)-I
HI 145 F5=RA*RND(1)-I:F6=RA*RND(1)-I
JQ 147 F7=RA*RND(1)-I:F8=RA*RND(1)-I
FP 148 F3=RA*RND(1)-I:F4=RA*RND(1)-I
RW 170 GOSUB 300
YW 188 GRAPHICS 24
SM 190 SETCOLOR 1,0,15:SETCOLOR 2,0,0
PZ 200 SETCOLOR 4,0,0
XZ 205 COLOR 1
SI 206 GOSUB 4000
QL 210 GOSUB 1000
RS 230 FOR D=1 TO 200:POKE 53279,0:NEXT D
   :REM ADD GO SUB 10000 FOR PRINTOUT AND
    ENTER GR8DUMP1
QL 270 GOTO 30
QO 300 REM
GZ 304 P=0
JF 305 Z1=INT(361*RND(1)):Z2=INT(361*RND(
   1))
LS 306 Z3=INT(361*RND(1)):Z4=INT(361*RND(
   1))
ET 307 V=361*RND(1)
OI 308 Z5=INT(361*RND(1)):Z6=INT(361*RND(
   1))
QV 309 Z7=INT(361*RND(1)):Z8=INT(361*RND(
   1))
RL 310 FOR X=V TO V+47 STEP 0.6
SY 315 T1=SIN((Z1+X)*F1):T2=SIN((Z5+X)*F5
   )
HT 320 Q(P)=ABS((A1X*(T1*T2+0.4)/1.4))
WO 321 T1=SIN((Z2+X)*F2):T2=SIN((Z6+X)*F6
   )
JU 322 W(P)=ABS((A1Y*(T1*T2+0.4)/1.4))
BD 326 T1=SIN((Z3+X)*F3):T2=SIN((Z7+X)*F7
   )
GD 330 E(P)=ABS((A2X*(T1*T2+0.4)/1.4))
EQ 331 T1=SIN((Z4+X)*F4):T2=SIN((Z8+X)*F8
   )
JN 332 R(P)=ABS((A2Y*(T1*T2+0.4)/1.4))
DI 338 IF P=74 THEN SETCOLOR 1,TINT,LUM:C
   OLOR 1
IQ 340 P=P+1:NEXT X
ZJ 350 RETURN
QY 1000 REM CALCULATE LINE
NO 1010 K=P-1
PJ 1020 FOR P=1 TO K
HY 1030 M=(W(P)-R(P))/(Q(P)-E(P))
PL 1040 B=W(P)-M*Q(P)
DX 1050 ST=(E(P)-Q(P))/20
PU 1065 IF Q(P)=E(P) THEN Q(P)=Q(P)+1:GOT
   O 1030
ZR 1070 GOSUB 1500
IM 1080 NEXT P
HC 1085 FOR XX=1 TO 400:NEXT XX
BA 1090 RETURN
LJ 1500 FOR X=Q(P) TO E(P) STEP ST
AW 1510 Y=M*X+B
HC 1520 PLOT 160+X,96+Y
IR 1530 PLOT 160+X,96-Y
JW 1540 PLOT 160-X,96-Y
IN 1550 PLOT 160-X,96+Y
MA 1560 NEXT X
BE 1570 RETURN
FV 4000 N=P
NR 4010 K=P-1
PM 4020 FOR P=1 TO K
NX 4030 PLOT E(P),W(P)
QR 4035 PLOT Q(P),R(P)
EK 4040 PLOT E(P),191-W(P)
GK 4045 PLOT Q(P),191-R(P)
EN 4050 PLOT 319-E(P),191-W(P)
HP 4055 PLOT 319-Q(P),191-R(P)
JM 4060 PLOT 319-E(P),W(P)
NI 4065 PLOT 319-Q(P),R(P)
IM 4070 NEXT P
GP 4080 P=N
BD 4090 RETURN
OQ 9000 DIM CR$(1):CR$=CHR$(155):DIM A$(1
   92):REM FOR PRINTER DUMP
HZ 9010 GRAPHICS 2:OPEN #1,4,0,"K:":POKE
   752,1
WC 9020 SETCOLOR 0,8,10:SETCOLOR 2,0,0
JI 9030 PRINT #6;CR$;CR$;CR$;CR$;
IX 9050 PRINT #6;"      CRYSTALS"
QZ 9060 PRINT #6;""
TT 9070 PRINT #6;"      by dynacomp"
RN 9080 PRINT " Please Wait ........"
VF 9090 POKE 752,0:RETURN
```

-- if using the SpartaDos X Cartridge and you wish to disable the Cartridge while booting another disk, rather than pulling out the cartridge, go to basic, type: POKE 580,1 [RETURN] and hit SYSTEM RESET this will boot up a disk with the cartridge disabled.

-- if you use SpartaDos X, why not make up a disk which on bootup loads that excellent program from Page 6 issue #33, Softkey. Put on all your most regular commands, for example I use:

Q - DIR "D8:*.*
L - LOAD "D
S - SAVE "D
E - ENTER "D
A - X D8:Filename1.OBJ
B - X D8:Filename2.OBJ
etc.
Y - COPY D1:Filename1.OBJ,D8:Filename1.OBJ
Z - COPY D1:Filename2.OBJ,D8:Filename2.OBJ

I load in Turbo Basic and Textpro into D8: on bootup from an AUTOEXEC.BAT file and then use DOS and Softkey to load them instantly. This is only worth doing if you can easily exit from your program to get to DOS to load the next ML program, but of course it works fine using Basic programs.

FINALLY I PRESENT ....

I have included a nice little program that produces very interesting randomly produced graphic designs in mode 8. I bought it from America years ago, but have never seen in over in Europe. It's in Basic and is best used with Turbo Basic or Compiled. I'm sure many readers would be interested in it, even though it is about 12 years old! I did add a utility to make a 62 sector file of the graphic on disk and then using the facilities in 'Print Shop' and PS Interface you can turn it into a file that can be loaded as a 'tile' background with 'Print Shop'. However this version seems to have gone astray, so I've just enclosed the basic program. I'm sure there are many enterprising young lads, or lasses, who can find a program to make a screen dump to disk.

Well thanks for listening to some tips from down under. In closing might I suggest that the magazine runs a page that includes useful tips on programming, useful Peeks and Pokes, etc. that readers send in, together with other little tricks. What sort of interest would there be in this idea?

Kit Lethby is a long term reader and supporter from Sydney, Australia where the Atari is still surviving (just!)

EIGHT BITS OF HISTORY

OR, THE WAY IT MIGHT HAVE BEEN Part 2

Ed Hall concludes his look at the fortunes of Atari throughout a short history

Tramiel found a way to survive. He withdrew from the American market and concentrated on his native Europe. There he built up a loyal following of customers whose brand recognition would soon carry them from Commodore calculators to Commodore computers.

Meanwhile, back in America, the calculator wars of the 1970's had two key impacts on the future development of personal computers. First of all, it plunged into debt a small businessman named Ed Roberts. In a desperate attempt to turn around his company's fortunes, he decided to offer for sale a computer kit called the Altair. It was the first ever commercially available personal computer, and it launched the personal computer revolution.

Another lasting impact of the calculator wars was the lesson it taught Jack Tramiel - the importance of being vertically integrated. Or in other words, don't depend on other companies for essential parts. Tramiel borrowed heavily in order to acquire MOS Technologies, thus providing a secure source of chips for Commodore calculators and watches. It was one of Tramiel's most brilliant moves.

As it happened, MOS Technologies had just developed a new microprocessor, the 6502. Intended for use in a computer, it was significantly cheaper to produce than the other leading chip on the market, Intel's 8080. To exploit this new chip, Commodore decided to enter the personal computer market. But before building their own machine, Tramiel decided to check out a computer already being developed around the 6502. He sent Chuck Peddle, the man who designed the 6502, and Andre Sousan, Commodore's VP of engineering, to see Steve Jobs. Acquiring the Apple II would save Commodore a lot of development time.

TOO MUCH FOR TRAMIEL!

Steve Jobs was ready to sell. He asked for $100,000, some Commodore stock, and employment for himself and Woz. But Jack Tramiel figured this was too much for a product being developed in a garage, and nixed the deal. Later, both Peddle and Sousan would defect to Apple.

In the meantime, however, Tramiel challenged Peddle to come up with his own design, and in 1977 - the same year that the Apple II and the Radio Shack TRS-80 Model I were introduced - the Commodore PET came out.

Commodore went on to corner the low-end home computer market, a success due in no small part to its "vertical integration." Thanks to Tramiel, Commodore was ready for combat when the dreaded Texas Instruments brought out its own personal computer. In the ensuing home computer wars of 1982-83, Tramiel had the satisfaction of crushing his old foe and driving it out of the personal computer marketplace. In the process Atari was badly mauled as it tried to keep pace with the savage competition.

Commodore's chief weapon in the home computer wars was the 64, a low-cost computer which matched the Atari 800 in graphics and sound. In 1983 Atari countered with the XL line, whose first model (the 1200) flopped miserably. The 800XL became Atari's main computer, but as the name suggests, it was basically a revamped 800. Though a good product, the 800XL offered no technical advancement over the Commodore 64, and even worse, Atari could not market it cheaper than the 64, because Atari was not vertically integrated.

Atari had become too moribund to find the kind of solutions it needed to remain an industry leader. In 1983, for example, rumours began to surface of a new computer with fantastic graphics and sound, a machine that many dubbed the 800's older brother, because it incorporated custom graphics chips designed by Jay Miner. Codenamed "Lorraine," it had started out as a game machine, but after the market went was converted to a computer. It was being developed by a small company called Amiga, whose greatest achievement up to that point was a device called the joyboard - a foot-operated controller that came packaged with a surfing game. Not only was the company set up by former Atari employees, but it also obtained a loan from Atari to assist with the development of the Lorraine. It was precisely the sort of product which Atari itself should have had under development.

Atari however was not the only company making mistakes. Commodore followed up on the twin successes of its VIC-20 and the 64 with a pair of colossal flops, the Plus 4 and the 16. This caused dissension in Commodore, and early in 1984 - at nearly the same time that Steve Jobs was triumphantly launching the Macintosh - Jack Tramiel abruptly resigned. Com-

modore stock fell and suddenly its future was uncertain, especially when Tramiel resurfaced 6 months later and bought controlling interest in Atari. A number of key people followed him there - in addition to his three sons, there was Greg Pratt, Sig Hartmann, Elie Kenan, and others. One of them, Shiraz Shivji, led the team of engineers who produced the ST computer in a miraculous 6 short months.

WHO WANTS THE AMIGA?

When Tramiel took up residence in Sunnyvale, he was paid a visit by Amiga Corp. They now had a working prototype of the Lorraine, but needed more capital to bring it to market. Was Tramiel interested in acquiring it? Tramiel was, but the offer he made wasn't to their liking, so off Amiga went to Commodore.

Commodore, however, was preoccupied by the upheavals which followed Tramiel's departure, and showed no interest.

Reluctantly Amiga returned to Atari to accept Tramiel's offer, but were stunned to learn that it was now much less than before. With the ST under development, Tramiel had no need for another 68000-based computer. Besides, Amiga still owed Atari money, and if they defaulted on the loan, Atari would pick up Amiga's assets anyway. Amiga stubbornly refused to cut its losses, and for the second time left Atari without making a deal.

At the last minute, on the same day the loan was due, Commodore roared in and snatched the Amiga from under Tramiel's nose for $25 million.

Atari and Commodore exchanged lawsuits - Commodore claiming that ex-Commodore employees who followed Tramiel to Atari had taken with them trade secrets, and Atari disputing ownership of the Amiga.

The ST debuted exactly a year after the Mac, and was dubbed the "Jackintosh" by the press. The Amiga came out later in 1985 but the ST had stolen much of its thunder. And like the Macintosh, Amiga sales were initially disappointing.

ATARI STILL VIDEOGAME KING!

The appearance of IBM's PC in 1981 may have validated the personal computer to corporate America, but it also marked the beginning of fresh turmoil. The firm which stood to lose the most because of IBM was Apple, for both companies set their sights on the high-end market and the business world. It did not take long for IBM to overtake Apple's lead. By the end of 1983 Big Blue commanded about one-third of the market and had displaced Apple as the industry leader.

The year had begun well for Apple with John Sculley coming from Pepsi to replace Mike Scott, who had left in 1981. The Lisa and the Apple IIe were both introduced that year, and for a while Apple stock soared. Then, just as was happening with videogames, the entire market began to sour. There was a recession on, and people were becoming fed-up with the glut of lousy games cranked out by greedy companies, and confused by the hyperbole spouted by competing computer brands. The industry needed a cooling-out period, and the consumer waited for the marketplace to settle down, for the options to become a bit clearer.

PROFITS DROPPING

Though Apple did $983 million in sales for 1983, it also suffered its first quarterly drop in profits, and its stock fell from a high of $63 to a low of $17. When the Lisa failed to crack the office market, it became clear that Apple's future rested with the Macintosh, even though Apple II sales remained surprisingly strong. But after a glitzy launch in 1984 and strong early sales, the Mac stalled. Many observers credit the leadership of John Sculley with keeping the company from going under. Finally a power struggle developed between Sculley and the increasingly erratic Jobs. It came to a head in 1985, which was to prove the most difficult year of all in Apple's history. Woz left the company in disgust and sold all his stock. Other key people began to leave the company as well, including Burrell Smith, the principal designer of the Mac, burnt out by Apple politics and 100-hour work weeks. Finally things came to a head between Sculley and Jobs, and Jobs was removed from his position as chairman. Stung to the quick, he resigned. Twelve hundred people were laid off. Morale was very low.

Atari meanwhile had begun to unravel a year earlier than Apple. At the time it was at the peak of its fortunes, with over 10,000 employees worldwide and some 70 buildings in Silicon Valley. Revenue in 1982 was its highest ever - $2 billion - but just before the year ended, Warner announced its earnings for the last quarter would not be as high as originally predicted, due to a slump in the videogame market. Immediately Warner stock lost a third of its value.

YOU LOST HOW MUCH?

In 1983 Atari suffered staggering losses - $450 million. It laid off 1700 people and accepted the resignation of Kassar, who was under investigation by the Securities and Exchange Commission for insider trading. Warner replaced him with James Morgan, a VP from Phillip Morris, a tobacco company. Morgan continued trimming operations but he couldn't staunch the bleeding quickly enough. Warner Communications had already become the second biggest corporate loser after Chrysler, and it had to get rid of Atari fast. That's when Jack Tramiel arrived in 1984. At last Atari was back in the hands of someone who knew the business.

Tramiel slashed Atari's bloated corporate structure until only a single building remained, and concentrated the company's resources on developing the ST computers. This meant abandoning the videogame market, of which Atari still controlled 75% in 1984. Tramiel shelved the 7800 game system, which had been unveiled just two months before he took over the company. Though its CPU was the aging 6502, the machine employed a new graphics chip dubbed Maria, which was Atari's first departure from the venerable player-missile system. The result was state-of-the-art graphics. Had the 7800 been released as planned in 1984, Atari might have maintained its market lead. By the time it realised that videogames were still a viable product, it was too late.

In 1986 Atari re-introduced the 7800, and brought out the 2600 (VCS) in a new case. In 1987 it released the XE game system, which was the 800XL in a new case, and offered its customers recycled software that was as much as 5 years old. These are not the moves that a company makes when trying to corner a market. They are what a company does when trying to pick up crumbs at someone else's dinner table. However, part of Tramiel's business philosophy is that it's often better not to

be first into a market, because then you can capitalize on the mistakes of others. And in 1989 Atari made a strong move in the videogame market by acquiring the Lynx, a handheld game machine which had been developed by a software company named Epyx. But by then the lead of Nintendo and Sega seemed almost insurmountable. Astonishingly, Atari was no longer videogame king. Ironically, its computers continued to suffer from the image of "game machines."

In other worlds Atari was the sole surviving company, as was Apple, as was Commodore and IBM. If you were free to choose the world which would it be? Or is the one in which you are reading this article more interesting?

A POSTSCRIPT: MORE SCIENCE FICTION

Steve Jobs, after being ousted from Apple, is now heading up a new company called NeXT, which is producing work stations. One of the first business deals he struck was with his old foe, IBM.

Nolan Bushnell is now working for Commodore.

Warner Brothers still owns a sizeable chunk of Atari.

Apple and IBM recently announced an "alliance" in a bid to counter declining sales.

ANNOTATED BIBLIOGRAPHY

1. GENERAL

FIRE IN THE VALLEY: THE MAKING OF THE PERSONAL COMPUTER *by Paul Freiberger and Michael Swaine. (Osborne/McGraw-Hill: 1984)*

This book is a good history of the chaotic early years of the microcomputer industry. Apple, Atari and Commodore are only part of this story. Find out about the other guys, such as IMSAI, Cromemco, and MITS.

HACKERS: HEROES OF THE COMPUTER REVOLUTION *by Steven Levy. (Doubleday: 1984)*

Engagingly written, this book brings to life the exuberant adolescence of the microcomputing industry, and has enough oddball characters in it to populate several Donald Westlake novels. You'll read about some of the crazy goings-on in the early days of Sierra On-Line, the company built by programmer Ken Williams and his wife Roberta (author of all those King's Quest adventures). There is an interesting courtroom scene when Atari brought suit against Sierra for copyright infringements on PacMan. This book is a must-read.

SILICON VALLEY FEVER: GROWTH OF HIGH TECHNOLOGY CULTURE *by Everett M. Rogers and Judith K. Larsen. (Basic Books: 1984)*

Of the flurry of books about computers which suddenly appeared in 1984, this one is the most dated. It gives a broad picture of life in Silicon Valley, and deals briefly with just about everything - venture capital, espionage, housing, the divorce rate, burnout, women in the industry, how a microprocessor is manufactured, etc. It also gives brief sketches of Apple, Hewlett-Packard, Intel, and assorted personalities.

THE SOUL OF A NEW MACHINE *by Tracy Kidder. (Little, Brown: 1981)*

This book describes the making of a new model of minicomputer by a group of employees at Data General. Despite its title, the book's focus is on the people rather than the machine. Although it has nothing to do with Atari or personal computers, it's worth reading for the insight it gives into the enormous personal cost required to produce a computer. Steve Jobs will look like less of an ogre after you read this book (which, incidentally, won a Pulitzer Prize). You'll love the prologue.

2. APPLE COMPUTER

Steve Jobs is, according to Jean-Louis Gassee, who eventually replaced him as head of the Macintosh division, "that handsome and tragic character out of some novel, that visionary monster, aesthete, lonely, detestable and fascinating creature." No wonder so many books have been written about him and Apple Computer. The cream of the crop are:

THE LITTLE KINGDOM: THE PRIVATE STORY OF APPLE COMPUTER *by Michael Moritz. (William Morrow and Co.,: 1984)*

STEVE JOBS: THE JOURNEY IS THE REWARD *by Jeffrey S. Young. (Scott Foresman and Co.: 1988)*

WEST OF EDEN: THE END OF INNOCENCE AT APPLE COMPUTER *by Frank Rose. (Viking: 1989)*

'The Little Kingdom" focuses on Apple's early years, and has little on the development of the Lisa and the Mac. "West of Eden," the most engagingly written of the big three, picks up where "The Little Kingdom" leaves off. "The Journey" is encyclopedic in its detail, and covers the entire period that Steve Jobs was at Apple.

ACCIDENTAL MILLIONAIRE: THE RISE AND FALL OF STEVE JOBS AT APPLE COMPUTER *by Lee Butcher. (Knightbridge Publishing Co.: 1990)*

The slightest of the books about Apple, it offers little that is new. Read it only if you want a quick potted history of Steve Jobs and the Apple story.

ODYSSEY: PEPSI TO APPLE ... A JOURNEY OF ADVENTURE, IDEAS AND THE FUTURE *by John Sculley with John Byrne. (Stoddart: 1989)*

Who is John Sculley? He's the man who got rid of Steve Jobs, and this book was written to expiate that guilt. Is he a skilled corporate hitman? Or a decent, hardworking person who saved Apple from itself? In support of the latter, he offers a picture of himself making a peanut-butter sandwich.

3. ATARI AND COMMODORE

HOME COMPUTER WARS *by Michael Tomczyk. (Compute! Publications: 1984)*

This book begins with the author taking home a pre-production Atari computer and playing Star Raiders obsessively for three nights in a row. A week later he quit his job, started learning BASIC, and began seeking work in the computer field. Though he subsequently received job offers from both Apple and Atari, he ended up with Commodore. The book is memorable for its portrayal of Jack Tramiel.

ZAP! THE RISE AND FALL OF ATARI *by Scott Cohen. (McGraw-Hill: 1984)*

This book reads like a hurried attempt to cash in on Atari's misfortunes. A major shortcoming is that it concentrates almost exclusively on Atari as videogame manufacturer and scarcely mentions its computers. The author tries to lend a sense of immediacy to his story by occasionally slipping into the present tense. In better hands the technique can work. Of all the books listed here, this is unfortunately the worst.

Ed Hall is one of our more far flung readers living in Yellowknife in the North West Territories in Canada where there seems to be a thriving little Atari community (well, we know of at least one other owner!). Get out an atlas and check out where Yellowknife is - you'll find it just north of Great Slave Lake just a couple of hundred miles from the Arctic Circle!

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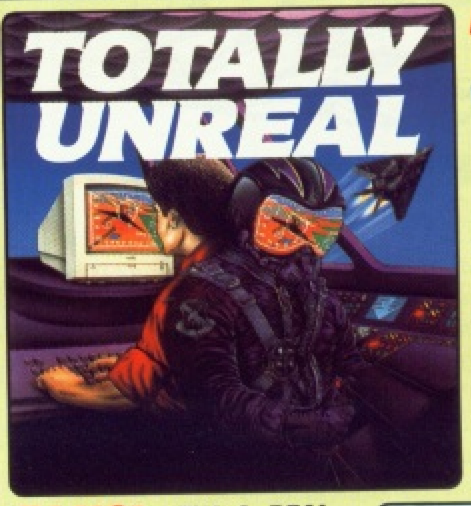
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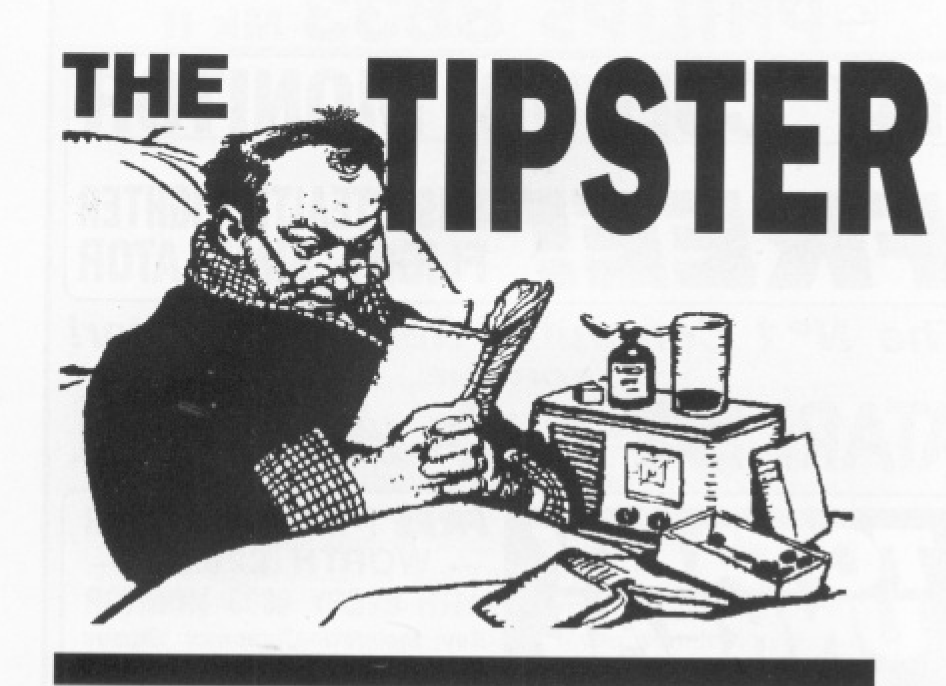
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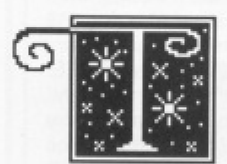
Which computer(s), if any, do you own? 64A

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THE TIPSTER

The Tipster hasn't faded away, he's back and stronger than ever!!!!!!



he time has slipped away once again, Christmas is looming on us once more, shops are shoving the "Xmas spirit" down our throats like there is no tomorrow and there are 20 million worried turkeys hurriedly hatching escape plans before it is to late. More importantly the nights are drawing in and the holidays are hurtling tantalisingly quickly towards us, which means that there are many hours of joyous late night gaming ahead of us.

What better early Christmas present from your friend and mine (what modesty!) than a bumper (and I mean a very bumper!) collection of yule tide tips and hints that should tide you over until the new year when we meet again.

This issue has tips for Mountain Bike Simulator, Lode Runner and Dungeon Adventure. All you amateur cartographers have been busy, sending in lots of different maps for all the best games. This issues map is from the adventure Lapis Philosophorum. Get those swords and torches out.

LODE RUNNER

has become much easier now that Jason Kendall of Peterborough has given you this comprehensive list of control features. To use these you must hold down the CONTROL key and then press the appropriate key.

CONTROL +	EFFECT
F	Increases lives (max. 255)
A	Kill man
U	Up 1 level
R	End go
+	Slower
*	Faster
D	Toggle digging direction
K	Keyboard controls I=Up: M=Down: J=Left: K=Right
J	Joystick mode

Also from Jas are a couple of tips for some classic adventure games.

RETURN TO EDEN from the SILICON DREAMS trilogy is the first for the Kendallsoft treatment. If you can't get rid of the Leviathan in the river then offer it fish fungus. You plant the brick in green sward with shovel and enter the house plant to find the fungus.

In **MYSTERY FUN HOUSE** from Scott Adams (what ever happened to the maestro? If you know drop me a line and we'll talk adventuring) if you want to know what to do in the house then read on. Move 'OUT OF ORDER' sign from fortune telling machine to shooting gallery. Return through maze to room with clay pigeon, this is now safe to pass through. Nearby is a hidden room with secret plans which, when taken should end the adventure.

Sorry that last bit wasn't backwards but I can't type it all in sdrawkcab.

PUSH THEM PEDALS!

Mountain Biking need not make you sweat any more thanks to Johnny Chan of Ledbury who has lots of nice hints and tips for PRO MOUNTAIN BIKE. He has the list of articles needed from the accessory shop and some hints when you get racing.

Level	Articles	Name of level
1	NOTHING	EASY PEASY ONE
2	NOTHING	U CAN COPE LAND
3	FAT TYRE	YOU DUNE WELL
4	PUNCTURE KIT	MOUNTAIN SPIKE
5	FAT TYRE, OIL CAN	WATER WAY 2 GO
6	ICE CHAIN, FAT TYRE	ICE AND EASY
7	ICE CHAIN, FAT TYRE, PUNCTURE KIT	A SILLY CON
8	ICE CHAIN, FAT TYRE	TINKS LEVEL
9	ICE CHAIN, FAT TYRE, PUNCTURE KIT, OIL CAN	A MIX DANGER

For levels 10 to 13 use the same articles and you can't go wrong.

When arriving at a brick ramp, go up in the lowest speed. When coming down speed up.

When arriving at a hill, go up in the fastest speed then slow down to half speed, just under the letter "E" at the bottom.

QUICK E'S ... QUICK E'S ... QUICK E'S

Leigh-on-Sea is a very busy place and Matthew Graham sends a quickie for **CAPT. STICKY'S GOLD**. If you press 1 to 8 and then start the game then you are taken to the appropriate level.

REAL SPORTS TENNIS shouldn't be a problem any more as Robert Maclean (sorry lost your address drop Page 6 a line and you'll get your badge) says that when playing the computer at singles ,once Suff has been played go to the net and play a short rally, the computer will then try to lob you. Go back and smash the ball away from the computer and you will then win 6-0 6-0.

At the high jump in **TRACK AND FIELD** when the bar is set to 2.40m you can go underneath it.

SPINDIZZY is frozen in time if you type PAT on the high score table. You've got Katrina Gattrell of Newport Gwent to thank for the last two.

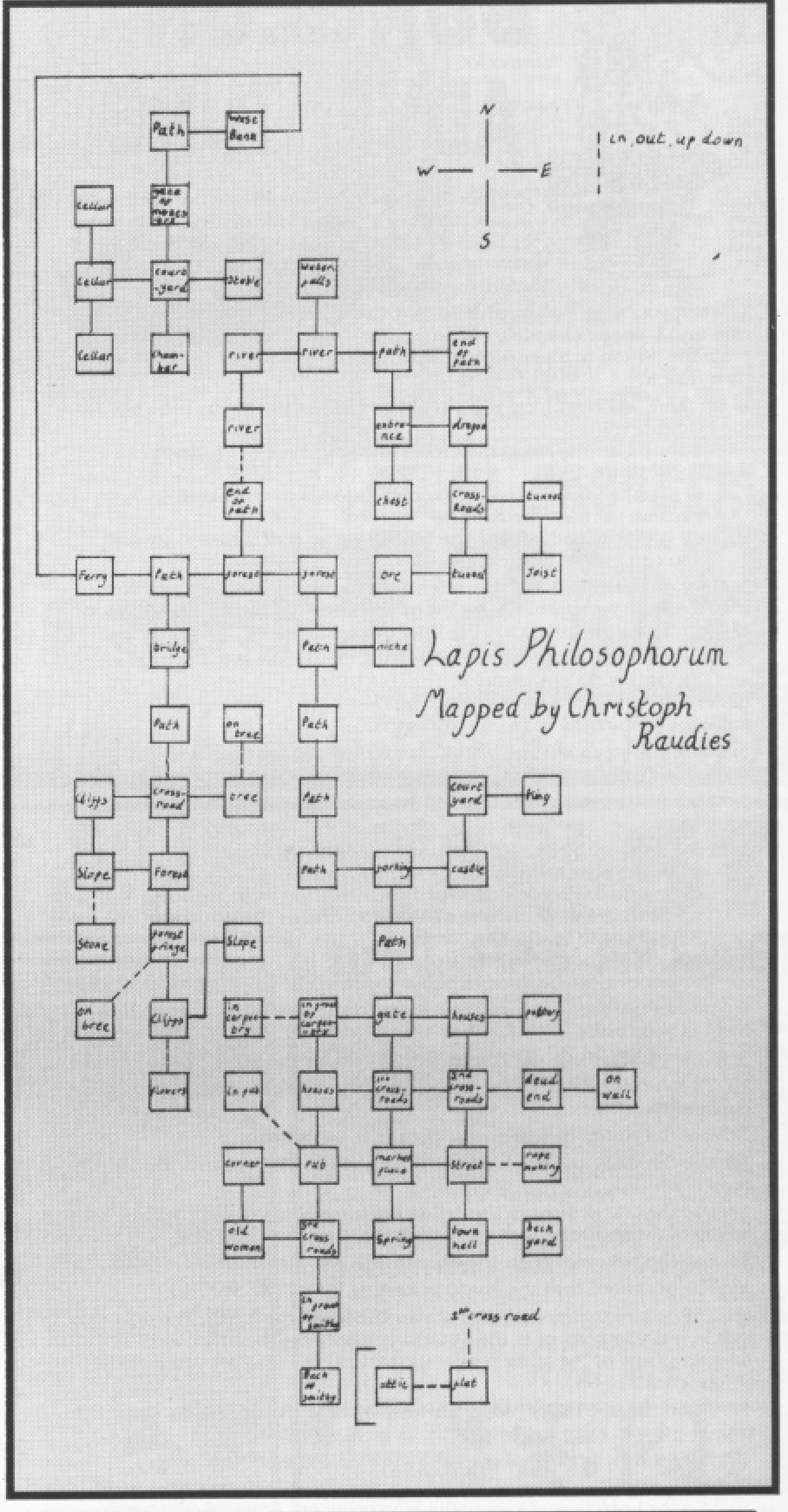
A nicely complementing couple of tips from Andy Sharman of Banbury Oxon. First up are a few hints for **KICK OFF**. When you have the centre keep chipping the ball down the pitch. While you are doing that the opposition will not move. When you get to the goal, chip the ball into the net and press fire and you are given a goal. (Make sure you chip the ball from the centre.)

If the ball gets too fast for you in **ARKANOID** then get someone to put something heavy on the space bar and the ball should then slow down!

Lapis Philosophorum

All the way from Germany comes the complete solution to LAPIS PHILOSOPHORUM, kindly donated by Christoph Raudies of Kirchheim Teck.
As is the way, FIRE GUN = ERIF NUG

U, NEPO TSEHC, EKAT KOOB/ETUL, NWOD, DAER KOOB, PORD KOOB, TUO, N, W, NI, DNEL REDDAL, TUO, E, E, S, S, S, E, HCTAC ESUOM, W, N, N, E, PU, TCARTTA TAC, W, W, N, N, NI, EVIG REDDAL, TUO, S, S, NI, YALP ETUL, TUO, W, S, EVIG TAC, N, E, E, YUB LEVOHS/EFINK, N, N, EZI-TONPYH SDRAUG, N, DAER NGIS (TON YRASSECEN), N, W, N, TUC DAER, N, OG RETAW, E, N, EKAT KCITS, W, N, W, W, ENIMAXE MAOL, PORD DAER/EFINK, EKAT TNIRP HTIW LEVOHS, E, E, S, S, S, S, E, S, S, S, S, S, W, S, S, ENIMAXE HTIMSKCALB, N, N, E, N, N, N, N, N, W, N, N, N, N, W, EKAT EGAILOF, W, S, S, EKAT SGIWT, N, N, W, PORD SGIWT/EGAILOF, E, EKAT KCITS, W, EKAM ERIF, W, W, S, DAER NGIS(TON YRASSECEN), NEPO ETAG, S, E, ENI-MAXE SEGAC, EKAT TEEHS LATEM, W, W, KAERB PU ROOD, W, S, PORD LEVOHS, EKAT GAR, HSILOP TEEHS LATEM, N, E, N, N, E, E, E, S, S, S, W, NWOD, ESU RORRIM, PU, E, N, N, N, N, W, W, W, S, S, W, N, NEPO HSAC XOB, (TERCES REBMUN), NEPO HSAC XOB, PORD RORRIM/GAR, EKAT REPAP/ELTTOB, DAER REPAP, S, E, N, PROD YEK, N, E, E, E, S, S, S, W, LLOR ENOTS, S/E/S/S, PU, EKAT REWOLF, NWOD, N, N, N, E, EKAT REHTAEF, W, N, N, N, E, E, S, S, S, S, E, S, S, S, NI, PORD REWOLF/ELTTOB/REPAP, TUO, S, YUB EXA/PMAL, E, NI, YUB EPOR, PORD YENOM, TUO, N, N, W, N, N, N, W, N, N, N, N, LLEF EERT, PORD EXA, EKAT SEERT, W, N, DLUIB TFAR, PETS NO TFAR, ELDDAP N/N/L, EVAEL TFAR, E, S, SEY, NOITULOS, S, KOOL NI TSEHC, EKAT REMMAH/SLIAN, E, E, S, EKAT YNOCLAB, N, W, S, PORP LENNUT, W, EKAT ERO, E, N, N, ELKCIT NOGARD, EKAT DNOMAID, W, EVIG DNOMAID, N, W, PETS NO TFAR, W, W, S, S, EVAEL TFAR, S, E, S, S, S, S, E, S, S, PORD KCITS/PMAL, E, E, EKAT TOP, W, W, S, S, S, EKAT RETAW, N, N, NI, EKAT RETAW, N, N, NI, EKAT REWOLF/RIXILE(?), EKAM ERIF, TUO, N, N, N, E, NI, E.
------ THE END ------



QUICK E'S ... QUICK E'S ... QUICK

Three nice and easy tips from Faisel Choudhry of Islington now follow and first up is **GALAXIAN**. For infinite lives start the game when your missile is ready and press SELECT quickly. Although the game prompts 'game over' you can still play.

Next up is an easy way for Spiderman to get 4 or 5 gems quickly in **QUESTROBE II**. Go to the elevator and enter the shaft and type in "EXAMINE TOOL NICHES" Repeat this procedure until there are no more gems left.

Finally is a "get you home" method of navigation for **TOMAHAWK**. If your navigation aids fail don't panic, just land and take the helicopter up to 10 feet and bring your speed to around 10-15 Knots and you should find a helipad, then land in the normal procedure.

Press the space bar during **STAR RAIDERS** and a sign saying "What's Wrong?" comes up. Thanx Robert Jordan of Wallington.

This issues last Quick E comes from Janice Phinnemore or more precisely her 6 year old son Christopher of Brynmawr, Gwent (a few more years and I'll have to watch my step!) Once you have typed in the numbers from Issue 51 to access the cheat mode in **MINER 2049'er**, find a safe place on the 1st screen and press ESCAPE twice once to pause the game and once to unpause, then press shift and the level number required, 1 to 10 (0). Well done Chris!.

ST FREAKS!

From the same stable as the last issue's ST demo tips comes a couple more:

SYNTAX TERROR When the demo tells you what it is not at the beginning type in GESICHTKONDOM and you should see a hidden screen of the coders as you've never seen coders before.

SKID ROW Face opposite the door with ACF3 on it and then go into it for hidden screen number 1 (THE ANTI AMIGA SONG) and then face the door with TRT1 on it and then turn right and go forwards one keypress and then turn right and you should see a door at the end of a corridor, this is the second hidden screen.

MORE TIPSTER OVER HERE ☞



DUNGEON ADVENTURE

From Stephen Rambaron (hope I've spelt your name right!) is a bucket load of invaluable tips for Level 9's DUNGEON ADVENTURE. (Stop pratting about I hear you cry and get on with it! Right here goes)

1. When you wake up you should take the wood and go into the packing case and take the chandelier to invert the room. Go to the machine and push the button to make a copy of yourself and then exit the case and then take it.

2. On the East/West road you should go and get the poppy seed pod for the following things:-
   i) Drop it in the clearing to scare the giants away, do this from above in the tree.
   ii) Examine the pod on the stepping stones to the island so that you can get past the siren.
   iii) Drop the pod outside the bird's nest so that it flies away and you can get the jade egg.

3. Once on the island take the siren's mirror and go on the East/West road to where you normally get hit by the sleep spell and it will bounce of the mirror then take what the thief has left.

4. Once you have six possessions go back to the island to the near side and then throw six possessions. The tree then has no arms left so go under it. When you threaten to cut it down a wood nymph will appear and offer you an idol in return for its life.

5. Go up the steep hill and wait at the top. When the people there appear, play the game and they use your dice, therefore you win.

6. At the fire junction light the drift wood so that you have light for the caverns.

7. In the room with eight exits you must do the following:-
   i) Get the octopus from the first dead end room to the North/West.
   ii) Go into the second dead end room and get what is there.
   iii) Go to the West and get all that you find in these rooms. Remember to search the corpse.
   iv) Go East now to get the needle.
   The last two can be done in either order.

8. You can use the case as a large store room for when you run out of room in your arms.

9. In the cavern room use the corpse as food for the jelly.

10. To go up the chimney you must wear the cold cream from the cupboard.

11. Use the potato to scare away the rat at the junction.

12. Use the nails and the hammer to close the coffin in the tower on the orc's nose.

13. Use the cracked pot in the cell to get some slime to trip up the goat on top of the statue so that you can get the horn.

14. Use the hollow to open the doors to the fort above the orc's head.

15. The password that the guard is looking for is "PASSWORD".

16. The collars that are around are for the teleport system. The only one that is really important is the Mithrill one because it can be used to teleport to any of the other pedestals. Mithrill will also get you into the throne room.

17. When the Roc takes you to his nest squeeze the caterpillar to get the rope to escape. Keep the caterpillar as he is valuable.

18. The dwarf is important as she leads you to the ore that is very valuable.

19. Use the horn to scare away the advancing orc army when it arrives.

20. When you are out of the nest you can find a wisp that can be trapped in the miners helmet and used instead of the wood.

21. If the wood starts to go out get back to the junction and re-light it.

22. On the wide ledge near the slime you can eat the mushrooms to make a golden bridge.

23. The deadly gem near the ghostly orcs can be broken using the hammer, removing the ghostly orcs.

24. In the U-shaped passage push the three rocks away to reveal an entrance. Once in push the boulder to remove the moss. Then go further in and take the sword.

25. Use the sword to kill the dragon above the room with six exits.

26. The flint that passes your nose will not be there if you get rid of the dragon. (This is in the six exited room)



This bit's a correction to a tip that appeared in issue 51 (must have been sleeping, eating, dreaming or generally doing stuff that any normal run of the mill columnist does in the time not spent chained to the key board!) The tip concerned VEGAS JACKPOT. What you must do is press help if you run out of money.

BEATING BOUNTY BOB

BOUNTY BOB STRIKES BACK has a nice warp feature in it that has been exploited to the max. by A.B. Card of Morden. You can miss out those tedious levels that get in the way of reaching those elusive final levels. To get to these levels read the spiel below and then get busy.

Level 1 Immediately after picking up flowerpot. Hold down 1 and START together to warp to level 4

Level 5 Pick up teapot.Hold down 8 and START together to warp to level 8

Level 10 Pick up trident.Hold down 5 and START together to warp to level 14

Level 3 Pick up chalice.Hold down 4 and START together to warp to level 15

Level 16 Point arrows 1 & 3 to the left. Pick up pie dish.Hold down 9 and START together towarp to level 19

Level 2 Destroy all monsters. Pick up paint roller.Hold down 3 and START together to warp to level 22

On completion of level 25 you can select any level you wish by using the special code on the options board.

HELP!!!

The wanted section this issue kicks off by Peter Panagiotopoulos asking for help with **INFILTRATOR** because he doesn't know where to land. He also needs help with **THE PAY OFF** but if you look in one of the previous editions of the Tipster you will find the complete solution to it.

Malcolm Attard asks for some really good help for all of the following adventures: **SPIDERMAN**, **CIRCUS**, **RETURN TO EDEN** and **TIME MACHINE**. Part of the answer to SPIDERMAN can be found elsewhere in this issue (if it's made it to the final copy?)

Next issue we will be having a full solution of **THE GOONIES**, comprehensive help with the bonus game **STAR TREK** on issue 51's issue disk and much more beside.

The Starfleet Controller (no that's not you Harvey, your time will come! Although don't stop sending the hints and tips, they're brill!) still hasn't replied to my last communique so the Mayday message goes out again. If it reaches Bournemouth then please respond as you said you had lots of nice maps (remember the 16 bit show?).

Well that has just about wrapped it up for another time, my power pack is almost on melt down, the stereo is straining to keep up with Bon Jovi and J.M. Jarre and besides my eyes are now a rather nasty obloid shape. I must now bid thee "fare thee well" and I hope to see you the next time, same time, same channel.

So its goodnight from him, bonsoir from them, and ta ta from me your favourite poly mimetic alloy T1000 terminator.

Send your bits 'n' bods and maps 'n' things to:

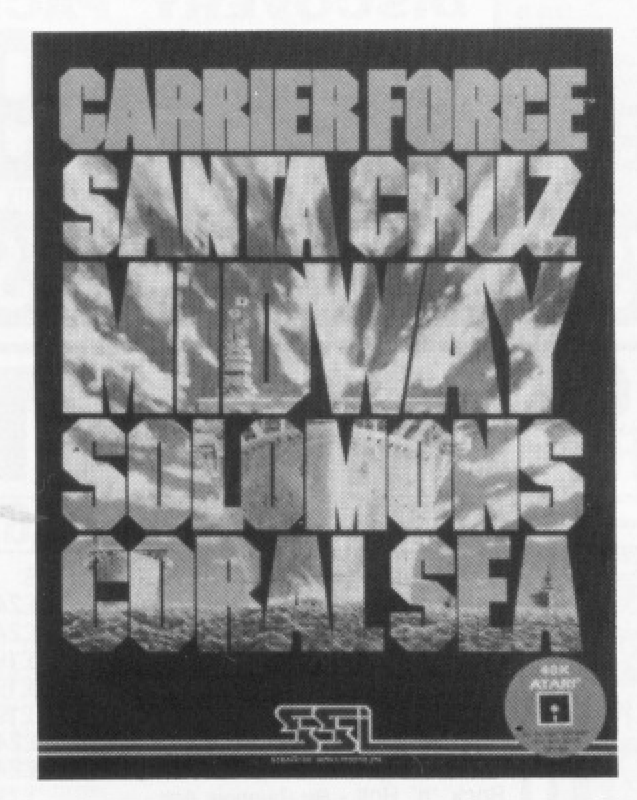
THE TIPSTER
NEW ATARI USER
P.O. BOX 54
STAFFORD
ST16 1DR

Remember I'll be back!!!!!





GO TO W



CARRIER FORCE

Congratulations to Gary Grigsby for designing for Strategic Simulations such an exciting, rewarding and stimulating game.

Here is a game that has everything the advanced wargamer could wish for - good, well-printed instructions, ample graphics and a map on which one can chinagraph positions as the game progresses.

Add to the above, historical accuracy of the battles depicted and the choice of playing not only a surface to surface scenario but also sending out bombing missions, fighter to fighter action and ship to base sorties and you have all the ingredients of a first-class game!

The sixteen pages which make up the instruction manual are clearly printed and are well laid out - the player should have no difficulty in referring to the instructions and quickly finding the information required.

The choice of game this package gives you is quite amazing. Firstly you have the choice of four scenarios: Coral Sea, Midway, Eastern Solomons and finally Santa Cruz. At the start of each game the computer will position ships according to their historical locations prior to the battle chosen. You can if you wish, choose to randomise your game at this point, except for the scenario depicting the Coral Sea.

Next comes the sequence of play, in which you adjust your fleet requirements and decide your battle tactics. Each game turn represents one hour - at the commencement of each turn the clock, calendar and weather are adjusted to reflect the passage of time and the changing battle conditions. Daylight hours are 0600 to 1800 hours inclusive. You may divide your task force if you wish and scuttle crippled ships using the Task Force adjustment phase of the game, Transferring ships from one force to another is also permitted.

The map display is excellent in this game, not only showing clearly the positions of the islands but also showing fleet positions (Americans in blue, Japanese in orange). Task Force movement occurs at the end of each game turn and loss of points can occur under certain conditions, for example, changing headings, landing and take-off of aircraft from carriers and if your heading course is different from the wind direction!

Launching air missions may be facilitated from land bases as well as carriers. Seaplane missions may also be launched for the purpose of searching for enemy forces, they have an endurance of sixteen turns.

The type of mission that may be flown by combat aircraft is determined by (a) the type of aircraft and (b) by the type of ordinance carried by the aircraft. The types of missions are listed in the manual under four initialled headings: F for fighter patrols; AS for anti-ship patrols; HE for high explosive and N for not armed (that is aircraft returning from sorties!). To launch AS or HE missions aircraft must have been readied at a previous turn.

There are operational limits imposed on both carriers and land bases, the player can consult a table in the manual expressing these limits. The carrier limits are flexible according to wind direction but land base limits are fixed. Air missions may consist of available seaplanes or combat readied aircraft. It is permitted to form a new mission from a carrier base and reinforce it from another carrier base within the same hex position. Bombers on air missions loaded with anti-ship ordinance cannot be mixed with missions carrying high explosives.

Air Mission Status Display lists the data giving location, number, time in the air, quantity of each type of aircraft, ordinance and air time for each type of aircraft. For bomber missions ordinance can be jettisoned before moving the mission.

After selecting the status display the map will appear on the screen with the cursor indicating the location of the air mission. Player options will appear at the bottom of the screen, these consist of ten options: (1) to (6) are directional (move north etc.), option (7) is for landing, (8) searches current hex, (9) identifies Task Force numbers and (0) searches current hex using only one movement point. The various tables in the instruction manual indicate the points allocated to the aircraft and ships used throughout the game.

The Combat Resolution section of the manual initiates the various combat options available to the player, from air to air combat through air to surface combat, bomber accuracy,

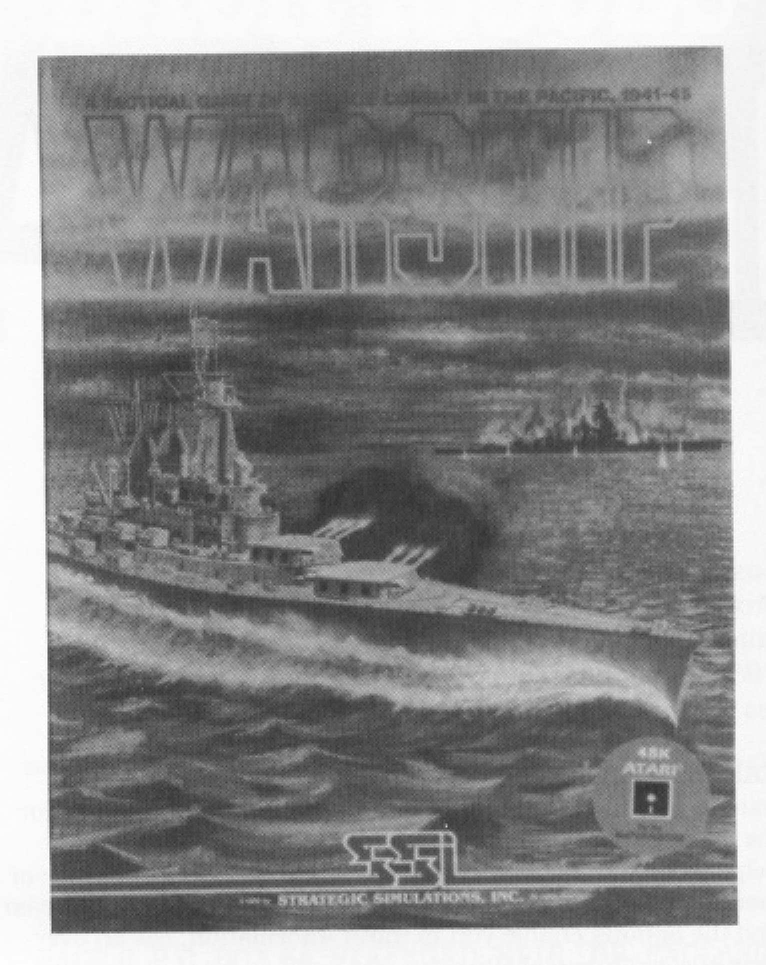
AR!

bombing bases, surface combat, submarine combat, coastal bombardment, unloading transports, capturing Midway to Battle Reports. This is the first mention of submarines and gives an added dimension to the battles!

The General Operations section gives you the endurance capabilities of the aircraft used in the game, the Ship Damage points system, Damage Effects percentages and Base Damage and the effects of weather on the battle scene. Included also are Non-Combatant Losses, Scenario Duration, Aircraft Classification, Air Base Restrictions, Radar and Pilot Ability Ratings.

Next comes the Scoring Section, Victory Conditions, Strategy Notes and finally Scenario Data which consists of tabular data relating to all the ships and their locations used in the four Battles in the Pacific, Coral Sea, Midway, Eastern Solomons and Santa Cruz.

This is indeed a game to study and enjoy, I am sure veterans of this period will find very little to criticise in this game especially with regard to its historical accuracy; experienced players will no doubt have great difficulty in pressing the "Save the Game" button - it gets just too absorbing to leave!



conducted by Norman Davies

WARSHIP

It says on the box that this is a game for the Advanced Player but, with the option to design your own scenario and choose you own battlefleet I certainly think this game can be played and enjoyed by less experienced players. Having said that, the potential player should not be lulled into the idea that this is a simple game to play - a glance at the 21 pages of instructions, neatly divided into 16 sections plus what amounts almost to a Jane's Directory of warships of the period - will soon dispel any illusions!

An hour or more studying the instruction manual is an essential start to this game. The instructions are clear and succinct and take you from section 1 - the basic step for starting the game to section 16 -which tells you how to modify your ship's data to create your own design of ship. Not only can you design and create your own fleet but, you can build your own scenario or, if you wish, choose one of the scenarios presented by the software - these consist of four great battles which were fought in 1942/3 at Guadalcanal(2), Empress Augusta Bay and San Bernardino.

Building your own terrain (Section 15.0) is easy to do and with 14 different design squares to use it gives plenty of scope for the imagination. The maps can be saved to a scratch disk for future battles as, of course, can partly-played games!

The player has a vast choice of ships both Allied (53 ships) and Japanese (27 ships) plus of course, making up your own fleet. Having chosen your fleet, designed your scenario or chosen one from the software and given your fleet its orders, a flip of the disk takes you to the game side of the game. Here I must admit I was disappointed - the graphics are indeed basic and the sound effects are more amusing than effective but then this is a game for the 'thinking' player so the above criticisms are but minor irritations and certainly do not detract from the quality of the game which is excellent.

As this is a game involving not only a time scale but also movement and speed, let the player be warned - ships can collide! With varying speeds and a medium to large fleet to command-the player needs to have his wits about him!

The multiple facets of this game, its potential for a realistic tactical warfare game, its built-in danger from the enemy to the scenario involvement (you can run aground!) means this is a game that requires a whole lot of playing. I'm sure the player will stop only with reluctance and will return with enthusiastic anticipation.

WARSHIP and CARRIER FORCE, along with several other wargames is available from Miles Better Software who kindly supplied the review copies.

CARRIER FORCE £16.95
WARSHIP £19.95
Both by SSI
Available from Miles Better Software

MORE APX

reviewed by Paul Rixon

Last issue we discussed the background of the Atari Program Exchange and examined a few of the best entertainment titles they released during the early 1980s. This time we explore the more 'serious' categories of user-written software.

FAMILY CASH FLOW is characteristic of much APX software in that it was originally conceived, written and tested for the exclusive use and enjoyment of its author. The program helps to keep track of personal finances by enabling storage of monthly income and expenditure details. It's fully menu driven and the options enable you to input information, list an overview of your financial situation and send an annual report to the printer. The transactions are divided into thirteen categories such as food, taxes and leisure. You can keep a general cash total for each section or enter dates and descriptions for items grouped within the main heading. In common with many APX programs, Family Cash Flow is written in Basic - this isn't as much of a drawback as you may think, since it means you can modify the code to meet your exact requirements.

UTILITIES

Programmers should find **BLIS** a welcome assistant. Blis is an acronym for Basic LISter and its purpose is to print program listings in a format that's more understandable than usual. Blis achieves this by indenting logical units such as For .. Next loops and If .. Then statements, splitting multiple statement lines onto separate rows and highlighting remarks in bold type. It also converts non-printable control characters into readable representations, adds page headers and titles and automatically numbers the pages. Although designed for the ancient Atari 825 printer, Blis worked successfully with my Panasonic and should therefore also agree with other Epson compatibles.

There are four programs contained within **THE BASIC UTILITY DISK**: Masher compresses Basic code into a small amount of memory by eliminating REMs, converting constants into variables and packing together short lines into longer ones. All you do is specify the input/output filenames and estimate the number of variables in the source file. The conversion is extremely long-winded but it works! XRef analyses Basic code on disk and displays the number of variables used, their names and the line numbers in which they occur - this could be helpful when debugging complex programs. Variable Changer allows you to modify a program's internal symbol table to improve the readability of listings or conversely to protect them from unauthorised hacking. Lastly, the Ultimate Renumber Utility claims to add an extra command to Basic - a facility to modify line numbers between any two points in a program. Unfortunately, it appears this isn't compatible with the XL/XE so unless you own a very old machine, you're unlikely to be impressed! Be aware that a few programs in the APX share this problem, which may or may not be overcome with a 'Rev. A' translator.

EDUCATION

The APX released a number of educational products for young children. **TYPO ATTACK** is one such program that proved so popular it was later adopted by Atari for inclusion in their full-priced range. Typo Attack presents the user with a screen comprising eight bases which must be defended from a bombardment of animated 'typo' invaders. Although it's rather like an arcade game, the educational value is derived from the fact that to destroy the invaders you must type in a character appearing beneath the appropriate base. As you become more proficient the invaders speed up and the characters change more frequently, eventually forcing you to rely on your touch-typing skills instead of searching for the corresponding keys.

Aimed at children aged three to eight years, **COUNTER** is an introduction to numbers in four languages. First of all the program displays differing numbers of Gorks (who are, of course, five-legged creatures from Atariland) on the screen and gives a visual and sonic reminder of the correct value. Once introduced to the basics, it's time for the player to have a go. A series of objects - such as cherries or sailing boats - are displayed, one at a time. When they've all appeared, the player is requested to count the objects and enter the number - success is rewarded by a short melody. There are six skill levels corresponding to the time limits imposed, and a choice of English, Spanish, German or French prompts.

Ending on a musical note, **INSOMNIA** provides an easy method of generating complex sounds for Basic games and applications. Instead of having to experiment with numerous loops and delays, you can model sounds by plotting points in three screen windows - for volume, frequency and distortion. Almost everything is joystick (or paddle) controlled and there are options to isolate individual voices, change the clock frequency for special effects and save work to disk for future revision. Finished sounds can easily be integrated with other basic programs, by incorporating the short code supplied which sets up a machine code routine to play them during the vertical blank interrupt. Whether or not you understand how it works, with a few POKEs it's simple to create some impressive noises!

LUCKY DIP

To conclude, the APX is best regarded as a lucky dip of computer software. It's not all great stuff, but there are certainly some useful programs and intriguing ideas just waiting to be discovered.

APX

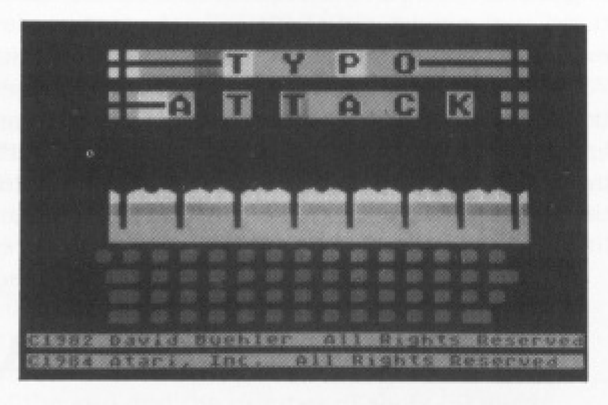
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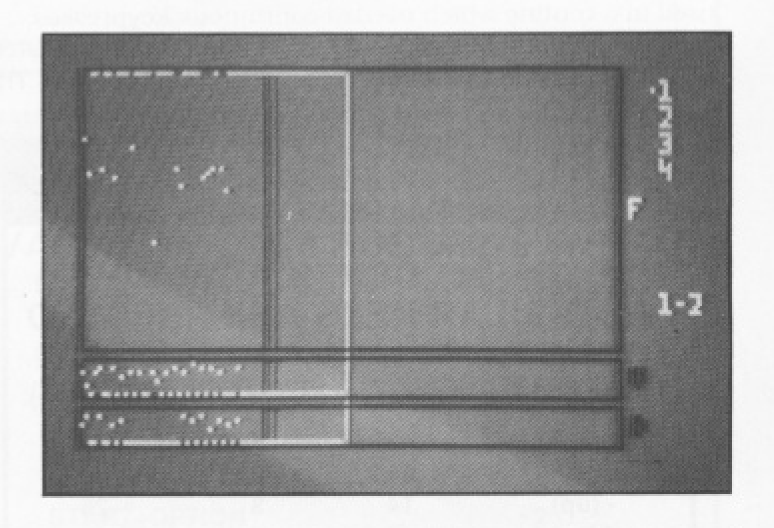
Detail of Finances

	INCOME	−	EXPENSE	=	VARIANCE
JAN	$ 4105.45	$	5898.14	−	1792.69
FEB	$ 3185.51	$	3679.56	−	494.05
MAR	$ 3329.81	$	3476.34	−	146.53
APR	$ 10503.97	$	6480.07	+	4023.90
MAY	$ 2618.21	$	4418.42	−	1800.21
JUN	$ 4797.46	$	4583.72	+	213.74
JUL	$ 5435.93	$	4156.23	+	1279.70
AUG	$ 4126.53	$	4860.80	−	734.27
SEP	$ 1908.97	$	1107.25	+	801.72
OCT	$ .00	$	.00	+	.00
NOV	$ .00	$	.00	+	.00
DEC	$ .00	$	.00	+	.00
TOT.	$ 40011.84	$	38660.53	+	1351.31

PRESS 'C' TO CONTINUE

***FAMILY CASH FLOW** - one of the few home accounts programs available for the 8-bit*





***Above TYPO ATTACK** - originally from APX*

***Right INSOMNIA** - a simple way to add music and sound effects to your programs*

HOW TO OBTAIN APX SOFTWARE

The APX software featured above was supplied by Gralin International, 11 Shillito Road, Parkstone, Poole, Dorset BH12 2BN. The exact composition of cassette and disk collections is subject to change and full details of current availability and prices should be sought from Gralin.

KEYBOARD INPUT

Ann O'Driscoll discusses several ways to interact with your Atari

Your Atari has several different ways to deal with user input from the keyboard from the most commonly known commands, GET and INPUT to checlking specific memory locations, which change when keys are pressed. These include the special console keys (START, SELECT, OPTION and HELP) as well as the main keyboard. Small demos of the various keyboard control methods are given in the attached listing which is divided up into sections to fit in with the topics covered in the article.

TESTING FOR KEYPRESSES WITH PEEK

Memory location 764 holds a number corresponding to the last (i.e. most recent) key pressed on the keyboard. Therefore, you can PEEK location 764 and go off on different routines depending on the value found there. The command usually takes the form IF PEEK(764)=X THEN ....(do something) where "X" is a specific number. Examples of values found in 764, along with their associated keys, are given in Table 1.

Location 764 will hold its "last key pressed" value until you push another key. You can clear the memory location with a POKE 764,255 - This is usually done before the PEEK is used to get rid of any old values.

Memory location 53775 also detects keypresses. This holds a 255 if no key is pressed, 251 if a key is being held down and 243 or 247 if shift is pressed too. The value in 53775 goes back to 255 as soon as you stop pushing, so this location might be used in a routine which needed continuous keypresses.

SECTION 1 of the listing (LINES 100-190) moves an asterisk across a GRAPHICS 0 screen when a key is held down. The opening lines give the instructions, disable the cursor (POKE 752,1) and set the initial column and row co-ordinates for the star (C and R respectively). LINES 110-20 clear location 764 and then freeze the program until a key is pressed. LINE 150 updates the column and row positions when a key is down (detected using location 53775) and loops back to LINE 140 to print the asterisk at the new co-ordinates. You are given a play again option when the star hits the end of row 10. LINE 180 pauses the program until "Y" or "N" are pressed: Pressing "Y" repeats the demo (LINE 190); otherwise the program continues to the next section.

TABLE 1

VALUES IN LOCATION 764 WHEN PARTICULAR KEYS ARE PRESSED

KEYPRESS	PEEK(764)	KEYPRESS	PEEK(764)
Y	43	1	31
N	35	2	30
- (up)	14	3	26
= (down)	15	4	24
+ (left)	6	5	29
* (right)	7	6	27
space	33	7	51
return	12	8	53
Atari	39	9	48
		0	50

USING CONSOLE KEYS

Memory location 53279 holds different values when the START, SELECT or OPTION console keys are held down. Because of this it can be used in the same way as locations 764 and 53775 outlined above. (i.e. IF PEEK(53279)=X THEN .. do something). The values associated with the various keys are shown in Table 2. You will see that you can hold down more than one key at a time and also that a value of 7 means that nothing is being pressed. The number in the memory location reverts to its default value of 7 when you stop pressing a key.

We read the "HELP" console key using memory location 732. While this location normally holds the number 0, PEEK(732) returns a value of 17 when HELP is pressed. Unlike the other console keys, location 732 does not go back to its default value when you stop pressing.

SECTION 2 of the listing makes a mock GRAPHICS 2 title screen. First the screen is set up and then LINE 220 freezes the program until START, SELECT, OPTION or HELP are pressed. The program does different things depending on the various PEEKs and then goes back to LINE 220 to wait for another keypress. While in a real program pressing HELP might send you off on a detailed subroutine, here the "instructions" just consist of a sentence in the text window. In any event it's important to reset the help location (with a POKE 732,0) to avoid the routine being executed on every round of the loop. SELECT and OPTION are used to change difficulty levels (variable L) and player numbers (variable PL). LINE 250 (together with the routines at 281-3) and LINE 260 take care of the screen printing for these. LINE 240 sends the program on to the next section (LINE 300) when START is pressed.

THE GET COMMAND

To use this command you must first open an IOCB channel for input from the keyboard. This takes the form OPEN #n, 4, 0, "K:" where "n" is a channel number. The command GET

```
EI 1 REM ********************************
EP 2 REM *   KEYBOARD INPUT ROUTINES    *
RQ 3 REM *             by               *
SR 4 REM *        Ann O'Driscoll        *
EC 5 REM * ---------------------------- *
XX 6 REM * NEW ATARI USER - Dec/Jan 91  *
EO 7 REM ********************************
NN 8 REM
SS 90 REM -- KEYBOARD INPUT ROUTINES --
BU 97 REM
CM 98 REM  SECTION 1
TB 99 REM  USING PEEK(764) AND (53775)
WZ 100 GRAPHICS 0:POKE 752,1:R=5:C=9
OL 110 ? "Press a key to start":POKE 764,255
ZQ 120 IF PEEK(764)=255 THEN 120
IN 130 ? "Hold down any key to move the star":POSITION 2,R:? "START":POSITION 36,10:? "END"
ZV 140 POSITION C,R:? " *"
FD 150 IF PEEK(53775)<>255 THEN C=C+1:IF C>37 THEN C=0:POSITION 38,R:? " ":R=R+1:IF R>10 THEN 170
NK 160 GOTO 140
WY 170 POKE 764,255:POSITION 2,15:? "Want another go (Y/N)?"
ES 180 IF PEEK(764)<>35 AND PEEK(764)<>43 THEN 180
PM 190 IF PEEK(764)=43 THEN 100
RZ 197 REM
JY 198 REM  SECTION 2
XC 199 REM  USING THE CONSOLE KEYS
VW 200 GRAPHICS 2:? #6:? #6:POKE 752,1:? #6;"select level ";" EASY":L=2
TX 210 ? #6:? #6;"option   1 PLAYER":PL=2:? #6:? #6;"HELP  INSTRUCTIONS":? #6:? #6;"START  BEGIN GAME"
OL 220 IF PEEK(53279)<>3 AND PEEK(53279)<>5 AND PEEK(53279)<>6 AND PEEK(732)<>17 THEN 220
AS 230 IF PEEK(732)=17 THEN ? "K▸PRESS THE CONSOLE KEYS TO":? "▸MAKE YOUR CHOICES":POKE 732,0:GOTO 220
CJ 240 IF PEEK(53279)=6 THEN 300
FU 250 IF PEEK(53279)=5 THEN POSITION 13,2:GOSUB 280+L:L=L+1:IF L>3 THEN L=1
SA 260 IF PEEK(53279)=3 THEN POSITION 9,4:? #6;PL:PL=PL+1:IF PL>2 THEN PL=1
UH 270 FOR P=50 TO 0 STEP -2:SOUND 0,P,10,12:NEXT P
ND 280 GOTO 220
FM 281 ? #6;" EASY":RETURN
JV 282 ? #6;"MEDIUM":RETURN
KD 283 ? #6;" HARD ":RETURN
SA 297 REM
KR 298 REM  SECTION 3
QW 299 REM  USING THE GET COMMAND
HY 300 GRAPHICS 0:POKE 752,1:R=20:C=10:S=0:CLOSE #1:OPEN #1,4,0,"K:":POKE 764,255
KS 310 ? "Use the arrow keys for right and left":? "Push the spacebar to fire."
KP 315 POSITION 2,6:? "SHOTS: ";S:FOR N=2 TO 38:POSITION N,C:? "*":NEXT N
OD 320 POSITION C,R:? " ┴ "
AL 330 GET #1,K:IF K<>42 AND K<>43 AND K<>32 THEN 330
WD 340 C=C+(K=42 AND C<37)-(K=43 AND C>1)
CF 345 IF K=32 THEN R1=R-2:GOTO 360
NI 350 GOTO 320
YB 360 POSITION C+1,R1:? "!":POSITION C+1,R1+1:? " ":R1=R1-1:IF R1>9 THEN 360
NQ 365 S=S+1:POSITION C+1,R1+1:? " ":POSITION 9,6:? S:IF S>4 THEN 375
NM 370 GOTO 320
BI 375 ? "PLAY AGAIN (Y/N)?"
LY 380 GET #1,K:IF K<>78 AND K<>89 THEN 380
PB 390 IF K=89 THEN 300
SB 397 REM
LK 398 REM  SECTION 4
JH 399 REM  USING THE INPUT COMMAND
FQ 400 GRAPHICS 7:POKE 764,255:DIM A$(1)
KR 410 TRAP 410:? CHR$(125);"DRAW A BOX":? "INPUT LENGTH (1-159),WIDTH (1-79)"
RG 420 INPUT L,W:IF L<1 OR L>159 OR W<1 OR W>79 THEN 410
IC 430 COLOR 1:PLOT 0,0:DRAWTO 0+L,0:DRAWTO 0+L,0+W:DRAWTO 0,0+W:DRAWTO 0,0
XG 440 ? CHR$(125);"ANOTHER GO (Y/N)";:INPUT A$:IF A$<>"Y" AND A$<>"N" THEN 440
QL 450 IF A$="Y" THEN 410
SC 497 REM
MD 498 REM  SECTION 5
OX 499 REM  USING GET FOR STRINGS
AN 500 GRAPHICS 0:DIM B$(6):POKE 764,255:? "Please input your name: ";:FOR N=1 TO 6
PV 510 GET #1,K:IF K=155 THEN POP :GOTO 540
GR 520 IF K<32 OR K>90 THEN 510
MR 530 ? CHR$(K);:B$(N,N)=CHR$(K):NEXT N
YS 540 ? :? :? "THAT'S ALL ";B$:P=PEEK(755):POKE 764,255:POKE 752,1
TM 550 POSITION 12,10:? " PRESS A KEY "
RB 560 FOR N=1 TO 30:IF PEEK(764)=255 THEN NEXT N:POKE 755,2-PEEK(755):GOTO 550
IE 570 POP :POKE 755,P:POKE 752,0:POKE 764,255:END
```

#n,K then tells the computer to retrieve one byte of information (called K here) from this channel.

The value for K will be the ASCII number of the character pressed. You can convert this to an actual letter or number by using the function CHR$. For example, if you press "A" then PRINT K will return "65" while PRINT CHR$(K) will return "A".

When you use the GET command, the computer will wait for a keypress before continuing. As the keyboard handler (K:) gets its information from memory location 764 (see above), you should clear this location (with a POKE 764,255) before GET is used. Just like the PEEK commands, you can ensure that keys pressed are within a desired range (e.g. capital letters only; numbers only) by using IF .. THEN statements.

SECTION 3 uses GET to move a "gun" along the end of the screen and make it shoot at a row of asterisks. The opening lines turn off the cursor, clear location 764, give the instructions and set initial values for the row (R) and column (C) co-ordinates of the gun and the number of shots (S) used. Channel 1 is opened for keyboard input - the CLOSE command is put in first in case the channel was already open. LINE 330 stalls the program until left, right or space are

TABLE 2

VALUES IN LOCATION 53279 WHEN CONSOLE KEYS ARE PRESSED

KEY PRESSED	PEEK(53279)
START	6
SELECT	5
START+SELECT	4
OPTION	3
START+OPTION	2
OPTION+SELECT	1
OPTION+START+SELECT	0
No key pressed	7

continued on page 33

FONTVIEW

A useful utility by John Young to help select fonts for your programs

If you are a programmer it is quite likely that you have collected together a number of redefined fonts that you may wish to use in future programs. These fonts will have descriptive filenames but the chances of you remembering exactly what they look like are pretty slim. Most likely, you'll do what most of us do, just pick a font and use it, hoping that it will look alright.

With this problem in mind I sat down and wrote FONTVIEW, a short utility that will enable you to compare various fonts on screen to help choose the most suitable for your application. The program is simple to use, just type it in, save it and run it. Of course you will need some fonts to display and these should be collected together on one disk with the extender .FNT added to each font. The program only works with standard redefined fonts of the sort that take up 9 sectors on a disk and you can find plenty of these in the public domain and on old PAGE 6 issue disks.

Once run the program will go through a disk and read in up to six fonts at a time and display these on one screen in Graphics 0. It is thus quite easy to compare different fonts. There is no facility to select individual fonts to display, although this could be added to the program quite easily.

FONTVIEW is a basic utility that I have found saves a great deal of time and ensures that my programs use a suitable font. I hope that you find it as useful as I have.

```
HX 10 REM +++++++++++++++++++++++++++++++
KR 20 REM +          FONTVIEW           +
PN 30 REM +        by John Young        +
HZ 40 REM + --------------------------- +
EH 50 REM + NEW ATARI USER - OCT. 1991 +
IC 60 REM +++++++++++++++++++++++++++++++
BE 70 REM
UI 80 REM First it was asterisks, then hashes, but I've bucked the trend and used plus signs!
BU 97 REM
VA 98 REM  MAIN PROGRAM 
BY 99 REM
PM 100 DIM DIR$(512),DE$(17),FN$(16)
BK 110 POKE 106,PEEK(106)-24
YC 120 FN$="D:":NOMC=1
SK 130 GOSUB 1400
RO 140 GOSUB 1200
ZG 150 FF=0
TG 160 IF DE$(5,8)="FREE" THEN GOTO 200
VF 170 DIR$(FF*8+1,FF*8+8)=DE$(3,10):FF=FF+1
JU 180 INPUT #1,DE$
OM 190 GOTO 160
KY 200 CLOSE #1
AJ 210 FL=0
BG 220 FOR CF=0 TO FF-1
OV 230 FOR S=2 TO 8:IF DIR$(CF*8+S,CF*8+S)=" " THEN POP :GOTO 250
JW 240 NEXT S
ET 250 FN$(3)=DIR$(CF*8+1,CF*8+S-1)
RU 260 FN$(S+2)=".FNT"
RJ 270 POSITION 0,FL*4:? DIR$(CF*8+1,CF*8+8)
ZB 280 OPEN #1,4,0,FN$
MT 290 X=USR(ADR(IO$),1,7,CHA+FL*1024,1024)
KZ 300 CLOSE #1
YD 310 FL=FL+1:IF FL=6 AND CF<FF-1 THEN GOSUB 1600:GOSUB 1500:FL=0
HF 320 NEXT CF
TK 330 GOSUB 1600
TY 340 GOSUB 1700
MZ 350 GOTO 130
SH 997 REM
TB 998 REM  READ IN DLI M/C 
SN 999 REM
YY 1000 DIM DLI$(40):RESTORE 1050
TZ 1010 FOR I=1 TO 40:READ A:DLI$(I,I)=CHR$(A):NEXT I
EC 1020 HI=INT(ADR(DLI$)/256):LO=ADR(DLI$)-256*HI
EH 1030 POKE 512,LO:POKE 513,HI
AL 1040 RETURN
WK 1050 DATA 72,152,72,172,0,96,185,1,96,141,10,212,141,9,212,185,7,96,141,24,208,238,0,96,173
XP 1060 DATA 0,96,201,6,144,5,169,0,141,0,96,104,168,104,64
JZ 1097 REM
QM 1098 REM  READ IN I/O M/C 
KH 1099 REM
GP 1100 DIM IO$(52):RESTORE 1130
EX 1110 FOR I=1 TO 52:READ A:IO$(I,I)=CHR$(A):NEXT I
AH 1120 RETURN
ZH 1130 DATA 32,68,218,104,201,4,208,43
PP 1140 DATA 104,104,10,10,10,10,170,104
XO 1150 DATA 104,157,66,3,104,157,69,3
SV 1160 DATA 104,157,68,3,104,157,73,3
KD 1170 DATA 104,157,72,3,32,86,228,132
KG 1180 DATA 203,189,72,3,133,212,189,73
FL 1190 DATA 3,133,213,96
```

KEYBOARD INPUT continued

```
KB 1197 REM
PB 1198 REM  SET UP DISPLAY 
KJ 1199 REM
AX 1200 GRAPHICS 0
QS 1210 POKE 559,0
YY 1220 ROM=PEEK(756)
XX 1230 POKE 756,PEEK(106)
MT 1240 CHP=PEEK(106):CHA=256*CHP
US 1250 DL=PEEK(560)+256*PEEK(561)
WE 1260 POKE DL+2,240
NK 1270 FOR M=8 TO 24 STEP 4:POKE DL+M,13
   0:NEXT M
PL 1280 POKE 752,1
YU 1290 FOR I=0 TO 5
EC 1300 POSITION 9,I*4
KI 1310 FOR C=0 TO 127:? "␛";CHR$(C);:NEX
   T C
FB 1320 NEXT I
AO 1330 RETURN
KF 1397 REM
XK 1398 REM  TITLES 
KN 1399 REM
CF 1400 GRAPHICS 2
OI 1410 SETCOLOR 2,0,0:POKE 752,1
CP 1420 DL=PEEK(560)+256*PEEK(561):POKE D
   L+9,6
ID 1430 POSITION 6,0:? #6;"FONTVIEW"
LS 1435 POSITION 4,4:? #6;"by john young"
DM 1440 IF NOMC THEN GOSUB 1000:GOSUB 110
   0:NOMC=0
SI 1445 ? "    Insert disk and press  STA
   RT ":? "              or  OPTION  to quit"
IQ 1450 IF PEEK(53279)=3 THEN POKE 106,PE
   EK(106)+24:GRAPHICS 0:END
YK 1455 IF PEEK(53279)<>6 THEN 1450
JO 1460 OPEN #1,6,0,"D:*.FNT"
VC 1470 INPUT #1,DE$
UT 1480 IF DE$(5,8)="FREE" THEN CLOSE #1:
   GOTO 1455
BI 1490 RETURN
KH 1497 REM
IG 1498 REM  SCREEN FULL 
KP 1499 REM
CG 1500 POSITION 25,FL*4-1:? " MORE (STAR
   T) ";
TQ 1510 IF PEEK(53279)<>6 THEN 1510
QB 1520 POSITION 25,FL*4-1:? "
      ";
RE 1530 POKE 559,0
AV 1540 RETURN
KJ 1597 REM
JT 1598 REM  TURN ON DISPLAY 
KR 1599 REM
DA 1600 POKE 24576,0
YE 1610 FOR I=0 TO 5
SS 1620 POKE 24577+I,CHP+I*4
OQ 1630 POKE 24583+I,20+I*16
FN 1640 NEXT I
CU 1650 POKE 54286,192:POKE 559,34
BD 1660 RETURN
KL 1697 REM
PC 1698 REM  NO MORE ON DISK 
KT 1699 REM
FB 1700 FOR I=FL TO 5
TC 1710 POKE 24583+I,26+I*16
FJ 1720 NEXT I
DJ 1730 POSITION 26,FL*4-1:? " END (START
   ) ";
AA 1740 IF PEEK(53279)<>6 THEN 1740
PD 1750 POSITION 26,FL*4-1:? "
      ";
BF 1760 RETURN
```

pushed. Pressing space (LINE 345) calls up the "shooting" routine at LINES 360-65. Pressing the arrows moves the gun's column position (LINE 340). You get a play again prompt after 5 shots; LINE 380 stalls the program until "Y" or "N" is pressed. As usual, "Y" repeats the program and "N" brings you to the next section.

THE INPUT COMMAND

INPUT is different to the GET and PEEK keyboard commands because you have to press RETURN to get the key(s) registered or accepted. String inputs have to be DIMensioned first and take the form INPUT A$ where A$ is the name of your string. Numeric inputs take the form INPUT number. You can also enter more than one item using a single input command (e.g. INPUT X,Y,Z) and you can mix strings and numbers (e.g. INPUT A$,X,B$). In the former case you can press RETURN or comma after each entry. You must, however, press RETURN after string entries because the computer looks on a comma as part of the string.

Normally the input prompt shows up as a question mark on the screen. You can get rid of this by using #16, viz. INPUT #16,X, or by opening the screen editor to input/output, viz. OPEN #n,12,0,"E:": INPUT #n,X (where n=channel number).

SECTION 4 of the listing draws a box on a GRAPHICS 7 screen when you input the length and the width. The TRAP statement returns the program to LINE 410 if you don't input numbers; the IF .. THEN statement ensures that the numbers are within the right range. While you can press comma or RETURN after the first entry, wrong numbers don't get picked up until you hit RETURN. This doesn't matter much here, but it might be important if you had a long list of inputs as one incorrect entry would mean you have to repeat the lot from scratch. LINE 440 does the "go again" routine. As usual, only Y or N are accepted but this time you must press RETURN after the key too. Because input string A$ (DIMensioned in LINE 400) has a length of 1, additional characters typed in will be lost. For instance, inputting "YZZZZ" would be acceptable as "Y" because only the first character is counted.

While the INPUT command accepts leading spaces as part of a string, it ignores spaces entered at the end or inputs consisting of spaces only. For instance, if you input "dog " (length 5) it is taken to be "dog" (length 3). You can get over this problem by building up your string character by character with the GET command. SECTION 5 shows how this works: LINE 500 sets up a 6 character string called B$. The next lines get a key and put its letter equivalent into the string. We don't have to open a keyboard channel this time because channel 1 was already opened in SECTION 3. Pressing return (K=155) pops you out of the loop, otherwise it covers 6 rounds (i.e. the length of the string). LINE 520 ensures that only certain characters are acceptable and each keypress is checked before its allowed into the string.

FINALLY ....

That about covers the Atari's keyboard input options. The press a key routine at the end of the program is included to show how you can make messages "flash" on the screen as this is often useful in keyboard input routines. POKE 755,0 makes any inverse characters printed on the screen come up as normal. POKE 755,2 (the value there ordinarily) turns them back to inverse again. LINES 550-60 swop from one to the other (with a short delay) until you press a key. LINE 570 puts everything back to normal and ends the program.

OLD-COMMAND

by David Manlove

Old-Command is a two-in-one utility offering program protection and the setting up of a function key by adding two new commands to Atari Basic. The utility is so-called because it brings to you the long overdue command, 'OLD', which enables the programmer to recover a listing accidentally wiped. Also it allows the user to build up, via the 'COMMAND' statement, a buffer of commands that are commonly used which may be executed with one keypress.

THE OLD STATEMENT

This ne command will enable programs to be recovered that have been 'lost' by typing NEW, by loading a new tape program or by overwriting from disk.

When the computer performs a NEW statement it does not wipe the current BASIC program from memory, it merely resets the program pointers from the top of the program to the bottom, making the user think that all work has been lost. It would, therefore, seem a simple task to reset the pointers back to the top, but what if a new program has since been typed in? This is where the most powerful use of OLD-COMMAND comes in as it offers almost maximum protection by dumping the first 22K of your program into the space behind Basic, the Floating Point package and the Operating System (high memory from now on). Even if you program is longer than 22k you may still be able to recover it as explained later. Even if the original program is overwritten, it could still be recoverable as the following situations explain.

Situation 1: I have typed in a small program and entered NEW by mistake. Solution: Enter OLD and the program is back. The program will protect against NEW if NEW is typed on its own at the beginning of a line.

Situation 2: After NEWing a small program by mistake I proceeded to type a second program in on top. I recovered my original program by typing OLD but then found I wanted the second program back after all. Solution: Enter OLD again. When OLD is typed the program in high memory is exchanged with the current program so 2 programs can be swapped around to minimise loss.

Situation 3: I have typed in a program and entered CLOAD by mistake. When the new program came up I realised the error. Solution: Type OLD for the former program, and OLD again if desired for the second. Note that OLD-COMMAND will dump your program as soon as disk or cassette is accessed (via commands such as CLOAD, LOAD, ENTER, RUN "C:" or RUN "D:" etc.). No matter how far the load has progressed, the program can be recovered.

The condition on all this is that if the program that is lost is more than 22K long, and the overwriting program is more than 22K long, the system MIGHT crash when attempting to OLD. It is best to SAVE the overwriting program and then give it a try - you may well recover 22K of your old program. Having said all this, it is VERY unlikely that you would ever be in this situation. The majority of the time this utility will happily recover 'lost' work.

THE COMMAND STATEMENT

This is a useful timesaver. If, during programming, you notice that you seem to be using the same direct-mode commands repeatedly, you can now store them up in a buffer and then press one key (HELP) to run them as if you had just typed them in. The way to store them in the buffer is to type COMMAND. The prompt comes up and the series of commands must be entered just as if you were entering a direct-mode line. This is an example of what could be typed after the prompt, "Enter New Command":

```
GRAPHICS 0:POKE 710,238:POKE 712,238:POKE
709,0:POKE 752,1:POKE 622,255:POKE 82,0:POKE 756,204
```

Every time Help is pressed, the above will be executed.

You are limited to 120 characters and Return must be pressed to store the statements. Note that the Help-key utility switches off whilst RUNning programs to prevent unwanted access. The Command buffer is cleared on typing NEW or OLD.

DISK OPERATING SYSTEM

OLD-COMMAND becomes a very effective 'MEM.SAV file' because any current programs are automatically dumped to high memory on typing DOS. Therefore you have 22K of protection without having to create a MEM.SAV on disk. Simply recover the utility after exiting DOS by pressing Reset. Typing OLD will recover your former listing. The condition of this feature is that only the ORIGINAL DOS 2.0 or 2.5 must be used.

TYPING IT IN

There are two versions: cassette users type in Listing 1, SAVE it and create their own autoboot cassette following on-screen instructions. This is then loaded by switching off the computer, removing all cartridges and then switching on while pressing Start. Press any key to commence boot. Disk users create an AUTORUN.SYS file on a fresh disk by typing in Listing 2 and SAVEing. Load by switching on the computer with the disk in drive 1. Just after typing NEW or OLD ignore any screen flashes - this is the utility accessing the region A000-FFFF - and a double READY sign - this is simply the utility checking to see if a program is in memory.

NOTE: *This utility can only work with XLs (600XL and 800XL) or XEs (65XE and 130XE) due to bank-switching techniques.*

OLD-COMMAND

```
EI 1 REM ********************************
HK 2 REM *          OLD-COMMAND          *
MB 3 REM *        By David Manlove       *
PV 4 REM *           LISTING 1           *
YG 5 REM *       (CASSETTE VERSION)      *
ED 6 REM * ----------------------------- *
XY 7 REM * NEW ATARI USER - Dec/Jan 91 *
EP 8 REM ********************************
NO 9 REM
QK 95 REM READ IN DATA
PP 100 DIM HEX$(94),P$(2):RESTORE 230:FOR
    A=1536 TO 1549:READ B:POKE A,B:NEXT A
    :TRAP 170:MEMADR=14848:RESTORE 250
GV 105 GRAPHICS 0:POSITION 14,1:? "OLD-CO
    MMAND":TOT=0
DM 106 POSITION 9,2:? "Creating cassette
    file"
OK 110 POKE 82,15:? :? "Reading line";:PO
    KE 82,19:?
AU 120 ? 250+L
WL 130 READ HEX$:FOR H=1 TO 94 STEP 2:P$(
    1)=HEX$(H,H):P$(2)=HEX$(H+1,H+1):H1=AS
    C(P$(1,1)):H2=ASC(P$(2,2)):D2=D2+1
DN 140 H1=H1-7*(H1>64):H2=H2-7*(H2>64):H1
    =H1-48:H2=H2-48:DEC=H1*16+H2
ZI 150 POKE MEMADR+(H-1)/2,DEC:TOT=TOT+DE
    C:IF TOT>999 THEN TOT=TOT-1000
XV 160 NEXT H:MEMADR=MEMADR+47
FG 161 READ CHK:IF CHK<>TOT THEN POKE 82,
    2:? :? "Wrong data in line ";250+L;"!"
    :END
JH 162 L=L+10:TOT=0:GOTO 120
DJ 165 REM WRITE AUTORUN FILE
TY 170 POKE 82,2:? ;:IF L+250<>460 THEN ?
    :? "Not enough data in line ";250+L;"
    !":END
RC 175 ? :? "Writing Autoboot cassette":?
    "Insert blank cassette and "
AB 176 ? "press Return":TRAP 215:POKE 764
    ,255:INPUT P$
UH 180 OPEN #1,8,128,"C:"
VM 190 POKE 850,11:POKE 852,0:POKE 853,58
    :POKE 858,8
DM 200 A=USR(1536,1000):CLOSE #1
UJ 210 ? "All done":END
UM 215 CLOSE #1:? "Cannot write file":? "
    Error ";PEEK(195);" encountered"
GF 216 ? "Rectify and ";:GOTO 176
DT 220 REM M/C WRITE ROUTINE DATA
WM 230 DATA 104,104,141,89,3,104,141,88,3
    ,162,16,76,86,228
XR 240 REM PROGRAM DATA
IG 250 DATA 00089B066607A93C8D02D3A966850
    AA907850BAD0ED48D300AA00FB900E4998D078
    810F7AD91071869018DBE07AD92,593
ZM 260 DATA 0769008DBF07A9BC8D9107A9078D9
    207A20FBD40E49D9D07CA10F7AD40E41869018
    DC009AD41E469008DC109A9B28D,354
YI 270 DATA 9D07A9098D9E07A200A9009D0006E
    8D0FA1860AD2D0AC9FFF0034C1509ADE70285C
    BADE80285CCA90085CDA9A085CE,646
QD 280 DATA 20E909A000B1CDAAB1CB91CD8A91C
    BC8D0F3E6CCE6CEA5CEF00BC9D0D0E5A9D885C
    E4C2B07A011B96C0AAAB9800099,157
JH 290 DATA 6C0A8A99800088810EF20D7094C1F0
    9A98D8D2103A9078D2203A99D8D1E03A9078D1
    F03A9FE8DE702A90A8DE802A209,514
CJ 300 DATA A0FAA9074C5CE4000000000000000
    00000000000000000000000000000000000000
    00000000000000000000000000,982
FC 310 DATA 0000000000000000204AF208C99BF
    005EE290A2860AD290A8D280AA9008D290A8E2
    A0A8C2B0AAD2F0AF0034C5808A0,350
UM 320 DATA 00A2008E2C0A8E320AC8E8B9330AD
    D7F05F0F6C980B0068D320A4CED07297FDD7F0
    5F017A9008D320AEE2C0AEE2C0A,847
ZV 330 DATA A200AD2C0AC908D0D14C1509AD320
    AD0E4EC280AD0F3E005F003208809AE2C0ABD4
    60A85CBBD470A85CC6CCB00A000,87
LL 340 DATA B94E0A997E0AC8C004D0F58C2F0AA
    90C8DFC024CC308A0008C2F0AB9520A997E0AC
    8C004D0F58C2E0AADE70285CBAD,346
LJ 350 DATA E80285CCA001B188C980F03CA011B
    98000996C0A8810F720E909A9FF8D2D0AA9008
    5CD85CFA9A085CEA000B1CB91CD,133
UG 360 DATA C8D0F9E6CCE6CEA5CEF00BC9D0D0E
    BA9D885CE4C9A0820D709AD2E0AF004284CC30
    860AD2E0AF00CA55438E9058554,348
BP 370 DATA A9008D2E0AA9E08D9107A9088D920
    74C1F09AC310AC078F009B97E0AEE310AA0016
    0A9BC8D9107A9078D9207A9008D,736
IH 380 DATA 310A209309AD270AF008208407A90
    08D270AA99BA00160A99BAE2A0AAC2B0A2860A
    9FF85086CFABFA9008552A90C8D,559
RX 390 DATA 42032056E4A9038D4203A90C8D4A0
    3A9698D4403A90A8D45032056E4A90B8D4203A
    9568D4403A90A8D4503A9138D48,70
RI 400 DATA 03A9008D49032056E4A9058D4203A
    9788D4803A9008D4903A97E8D4403A90A8D450
    32056E4A90285524C1F09A97E85,185
XM 410 DATA CBA90A85CC4C9B09A98085CBA9058
    5CCA07FA92099800591CB8810F860206B08A90
    18D330A4C150948AD330AF009A9,70
KP 420 DATA 008D330A684CFFFF20C909684CBF0
    98A48984808206B082868A868AA60AD01D329F
    C09018D01D3AD300A8D0ED45860,608
HY 430 DATA A9008D0ED478AD01D329FC09028D0
    1D360ADDC02C911F0034C62E4A9008DDC02A00
    1B18AC980D0F0201C0AA9018D27,257
TM 440 DATA 0A4CD408AE64E4AC63E4A9074C5CE
    400000000000000000000000000434F4D4D414
    EC44E45D74F4CC4434C4F41C426,752
GZ 450 DATA 0940080C07A80952454D9B4E45579
    B9B456E746572204E657720436F6D6D616E649
    B453A9B00000000000000000000,216
```

```
EI 1 REM ********************************
HK 2 REM *          OLD-COMMAND          *
MB 3 REM *        By David Manlove       *
QW 4 REM *           LISTING 2           *
BH 5 REM *         (DISK VERSION)        *
ED 6 REM * ----------------------------- *
XY 7 REM * NEW ATARI USER - Dec/Jan 91 *
EP 8 REM ********************************
NO 9 REM
QK 95 REM READ IN DATA
PP 100 DIM HEX$(94),P$(2):RESTORE 230:FOR
    A=1536 TO 1549:READ B:POKE A,B:NEXT A
    :TRAP 170:MEMADR=14848:RESTORE 250
GV 105 GRAPHICS 0:POSITION 14,1:? "OLD-CO
    MMAND":TOT=0
LN 106 POSITION 11,2:? "Creating disk fil
    e"
OK 110 POKE 82,15:? :? "Reading line";:PO
    KE 82,19:?
AU 120 ? 250+L
WL 130 READ HEX$:FOR H=1 TO 94 STEP 2:P$(
    1)=HEX$(H,H):P$(2)=HEX$(H+1,H+1):H1=AS
    C(P$(1,1)):H2=ASC(P$(2,2)):D2=D2+1
DN 140 H1=H1-7*(H1>64):H2=H2-7*(H2>64):H1
    =H1-48:H2=H2-48:DEC=H1*16+H2
ZI 150 POKE MEMADR+(H-1)/2,DEC:TOT=TOT+DE
    C:IF TOT>999 THEN TOT=TOT-1000
XV 160 NEXT H:MEMADR=MEMADR+47
FG 161 READ CHK:IF CHK<>TOT THEN POKE 82,
    2:? :? "Wrong data in line ";250+L;"!"
    :END
JH 162 L=L+10:TOT=0:GOTO 120
DJ 165 REM WRITE AUTORUN FILE
RP 170 POKE 82,2:? ;:IF L+250<>530 THEN ?
    :? "Not enough data in line ";250+L;"
    !":END
VC 175 ? :? "Writing D1:AUTORUN.SYS":? "I
    nsert blank disk and "
AB 176 ? "press Return":TRAP 215:POKE 764
    ,255:INPUT P$
ST 180 OPEN #1,8,128,"D:AUTORUN.SYS"
VM 190 POKE 850,11:POKE 852,0:POKE 853,58
    :POKE 858,8
GX 200 A=USR(1536,1302):CLOSE #1
UJ 210 ? "All done":END
UM 215 CLOSE #1:? "Cannot write file":? "
    Error ";PEEK(195);" encountered"
```

continued

10 YEARS OF B.U.G.!



Oi! The camera's over here lads!

Pictured here is the committee of the Birmingham User Group at the club's 10th birthday celebrations demonstrating the amazing versatility of the Atari machines. Bet you didn't know that you can hold them two different ways up and even sit on the older ones? And you can do all this while watching the stripper at the same time!

The Birmingham User Group is, without doubt, the longest established and, surely, the most influential Atari User Group in the UK. Established in 1981 amid the wave of euphoria surrounding the Atari 400 and 800 machines, B.U.G. has seen the germination of much of what you now take for granted in Atari world. Without B.U.G. you would not be reading this very magazine, you would not have enjoyed Software Express who served the Atari community so well until their sad demise, you would not have had Derek Fern discovering new hardware and software for you every day and, arguably, you may not have had US Gold (who said 'so what'?). B.U.G. has been responsible for a great deal of the current Atari scene.

The group is still going strong and meets every Thursday evening at 7.30pm in the function room of the Matador public house opposite St. Martin's church in Birmingham's famous Bull Ring. If you are in Brum on a Thursday night, why not drop in? If you want to know more give their secretary, Steve Hough, a ring on 021 708 0958

Congratulations lads, hope you're still around in a year's time when we celebrate our tenth!

OLD-COMMAND

```
GF 216 ? "Rectify and ";:GOTO 176
DT 220 REM M/C WRITE ROUTINE DATA
WM 230 DATA 104,104,141,89,3,104,141,88,3
   ,162,16,76,86,228
XR 240 REM PROGRAM DATA
BI 250 DATA FFFF00069706A50C8DB41DA50D8DB
   51DAD0ED48D2221A90085CFA00FB900E499011
   E8810F7AD051E1869018D321EAD,748
EJ 260 DATA 061E69008D331EA9308D051EA91E8
   D061EA20FBD40E49D111ECA10F7AD40E418690
   18D3420AD41E469008D3520A926,283
GS 270 DATA 8D111EA9208D121EA00FAD2A0385C
   B8D2321AD2B0385CC8D2421B1CB99211E8810F
   8AD211E1869018D5520AD221E69,244
JG 280 DATA 008D5620A94A8D211EA9208D221E4
   CFC1CFC1C6921A200A9009D0006E8D0FA4CB61
   DA9008D0ED478A9FE8D01D3A9FC,210
KH 290 DATA 85CBA91C85CCA9A585CF18902EAD1
   E21C9FFF0034C891FADE70285CBADE80285CC2
   07020A5CFF013A90085CF85D085,213
JJ 300 DATA CDA9A085D1A9A585CE18900CA9008
   5CD85D0A9A085CE85D1A000B1CDAAB1CB91D08
   A91CBC8D0F3E6CCE6CEE6D1A5D1,852
SH 310 DATA C9D0D004A9D085D1A5CEC5CFF00BC
   9D0D0D7A9D085CEJ890D0A5CFD013A011B9602
   1AAB98000996021 8A9980008810,732
FR 320 DATA EF205E20A50DC906D0034C81204C9
   31F204015A9B3850CA91D850DA50A8DE920A50
   B8DEA20A99D850AA920850BA901,586
FH 330 DATA 8D2103A91E8D2203A9118D1E03A91
   E8D1F03A9218D2A03A91E8D2B03A9FC8DE702A
   9218DE802A220A0EBA9074C5CE4,595
KC 340 DATA 93EF2DF2301EAFF21DF22CF24C6EE
   F002620CEFD79FDB3FDCBFDE4FC4CDBFC004A2
   08F0A4D0A8F09BC072A0B804020,938
YL 350 DATA 10204AF208C998F005EE1A212860A
   D1A218D1921A9008D1A218E1B218C1C21AD202
   1F0034CCC1EA000A2008E1D218E,68
KE 360 DATA 2621C8E8B92721DD7F05F0F6C9808
   0068D26214C611E297FDD7F05F017A9008D262
   1EE1D21EE1D21A200AD1D21C908,896
KI 370 DATA D0D14C891FAD2621D0E4EC1921D0F
   3E005F00320FC1FAE1D218D3A2185CB8D3B218
   5CC6CCB00A000B94221997221C8,598
RE 380 DATA C004D0F58C2021A90C8DFC024C371
   FA0008C2021B94621997221C8C004D0F58C1F2
   1ADE70285CBADE80285CCA001B1,422
YI 390 DATA 88C980F03CA011B98000996021881
   0F7207020A9FF8D1E21A90085CD85CFA9A085C
   EA000B1CB91CDC8D0F9E6CCE6CE,672
UK 400 DATA A5CEF00BC9D0D0EBA9D885CE4C0E1
   F205E20AD1F21F004284C371F60AD1F21F00CA
   55438E9058554A9008D1F21A954,132
OT 410 DATA 8D051EA91F8D061E4C931FAC2521C
   078F009B97221EE2521A00160A9308D051EA91
   E8D061EA9008D2521200720AD18,924
TQ 420 DATA 21F00820F81DA9008D1821A99BA00
   160A99BAE1821AC1C212860A9FF85086CFABFA
   9008552A90C8D42032056E4A903,872
CT 430 DATA 8D4203A90C8D4A03A95D8D4403A92
   18D45032056E4A908 8D4203A94A8D4403A9218
   D4503A9138D4803A9008D490320,926
EM 440 DATA 56E4A9058D4203A9708D4803A9008
   D4903A9728D4403A9218D45032056E4A902855
   24C931FA97285CBA92185CC4C0F,734
GW 450 DATA 20A98085CBA90585CCA07FA920998
   00591CB8810F86020DF1EA9018D27214C891F4
   8AD2721F009A9008D2721684CE6,64
FK 460 DATA FC203D20684C33208A48984808200
   F1E2868A868AA6048BD4A03C904F004684C650
   8203D20684C5420AD01D329FC09,233
LE 470 DATA 018D01D3AD22218D0ED45860A9008
   D0ED478AD01D329FC09028D01D360A000B9000
   6AAB9FC1C9900068A99FC1CC8D0,63
YA 480 DATA EFAD2121F001604CB31DA9008D210
   3A9E48D22038D1F03A9408D1E03AD23218D2A0
   3AD24218D2B03ADE920850AADEA,446
WR 490 DATA 20850BA9018D2121208120A9008D2
   121A9FC85CBA91C85CC20F11EA90D850CA9068
   50D200D214C9F17ADDC02C911F0,553
JE 500 DATA 034C62E4A9008DDC02A001B18AC98
   0D0F0200D21A9018D18214C481FAE64E4AC63E
   4A9074C5CE4000000000000000000,388
MN 510 DATA 00000000000000000434F4D4D414EC
   44E45D74F4CC4434C4F41C49A1FB41E231D1C2
   052454D9B4E45579B9B456E7465,677
QL 520 DATA 72204E657720436F6D6D616E64984
   53A9B00000000000000000000000E002E10200060
   000000000000000000000000000000,75
```

THE ACCESSORY SHOP
ISSUE 53

BARGAIN SOFTWARE

We are still managing to uncover a few new items of software for your XL/XE so check all the new items this issue. Check the inside front cover and the following pages. Some items previously advertised are now sold out but there are still word processors for you to choose, from the most simple to the most complex, plenty of games and much serious software - the choice is yours. As always we are able to offer these items at considerably less than the recommended price so check through the Accessory Shop pages.

NEW!



ROM CARTRIDGE

BLUE MAX

One of the classics of Atari history! Blue Max is set in 1915 during World War I and has you flying a mission in a bi-plane fighter bomber along a river attacking enemy planes and bombing bridges and the enemy's airfields. Superb diagonal scrolling similar to Zaxxon makes this an exciting classic game.

Normally £14.95

OUR PRICE £7.95

ROBOTRON 2084





It's the year 2084, and you're the only being left who can defend humanity against the Robotron armies! You've got to move quickly to rescue the defenceless humans and blast fast with your anti-robot laser gun to shatter the oncoming waves of Grunts, Hulks, Brains, Spheroids, Electrodes and mutant Progs. Only you can save the last survivors!

Normally £12.95

OUR PRICE £6.95

ROM CARTRIDGE

NEW!



CASSETTE ONLY

KICK OFF

One of the finest football simulations of all, Kick Off gives you a full size multi-directional scrolling pitch, five skill levels, one or two player option, league competition for up to eight players plus all the features of the real game including corners, penalties, yellow and red cards etc. Players may tire as the game progresses, get injured or sent off. Truly realistic!

Originally £7.95

OUR PRICE £2.95

MISSILE COMMAND

BACK AGAIN!



Another of the all-time classic arcade games that has you defending cities from missile attack. Command the defence guns as enemy missiles rain down from space to attack your cities. Later smart missiles and bombers will appear making the action more and more frantic. For one or two players.

Normally £14.95

OUR PRICE £5.95

ROM CARTRIDGE

LAST FEW!



CASSETTE ONLY

DECISION IN THE DESERT

JULY 1, 1942, the Battle of El Alamein begins, but will the outcome be different with you in command? You make the decision to deploy tanks, artillery, air cover and combat divisions. Choose to lead the armies of either side or challenge an opponent to compete against you. Excellent graphics and sound, five scenarios, historic accuracy, one or two players and more. An excellent simulation from the creators of F-15 Strike Eagle and Silent Service.

Recommended price £14.95

OUR PRICE £4.95

MOON PATROL

BACK AGAIN!



Your beat: Sector Nine, home of the roughest, toughest thugs in the galaxy. You have the finest patrol car on the force, complete with anti-gravity jump buttons and laser bullets, but you'll need more than a hot car in the rough terrain of Sector Nine. Blast UFOs. Leap over landmines. Demolish tanks and jump huge craters and moon rocks - just to survive. Great 3D graphics and good music add to the enjoyment of this addictive arcade conversion.

Normally £12.95

OUR PRICE £6.95

ROM CARTRIDGE

MASTERTYPE

Now anyone can learn to type whilst playing a challenging game. Mastertype was one of the original 'game based' typing tutors which requires you to zap enemy words as they approach from the four corners of the screen. But it not really a game for, before you realise it, you will become quite proficient on the keyboard as you progress through 18 lessons of increasing complexity.

ROM CARTRIDGE

Recommended price £14.95

OUR PRICE £2.95

LETTER WIZARD

LOWER PRICE!



For those who need a little more sophistication in a word processor, Letter Wizard gives you all of the basic features you would expect plus mail merge, print of selected pages, headers and footers, automatic page numbering and a whole host more print formatting styles. Although set up for Epson compatible printers or the NEC 8023, control codes can be sent direct to the printer. Comes with an easy to learn and use manual plus a handy Quick Reference card.

Original Price £19.95

OUR PRICE *NOW* £5.95

DISK ONLY

99p CASSETTE SPECIALS

NEW!

HANGMAN

The original computer education game suitable for ages from 8 to adult. Three levels of play with 40 words in each. You play against the computer by guessing the word the computer has chosen. Uses keyboard or joystick.

CASSETTE ONLY

OUR PRICE JUST 99P!

TAIL OF BETA LYRAE

NEW PRICE!

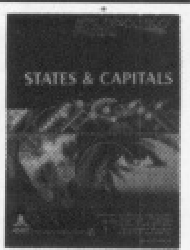


Our A-Z of Atari Software series says "The ultimate 'Scramble' clone with superb graphics and music. This humdinger of a horizontally scrolling shoot 'em up was written by Philip Price, and the music was by Gary Gilbertson. They later went on to write the 'Alternate Reality' games." This is one of the few original 'classics' right up there with the top arcade games of all time. Give your eyes, ears and reactions an unforgettable treat!

OUR PRICE JUST 99P!

CASSETTE ONLY

LAST FEW!



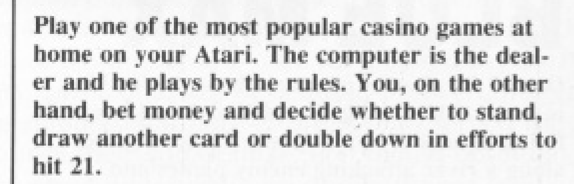
STATES AND CAPITALS

Learn the geography of the United States with this program which draws outline maps of each of the States and asks you to identify it and its capital. Useful for school geography and for anyone interested in the USA.

CASSETTE ONLY

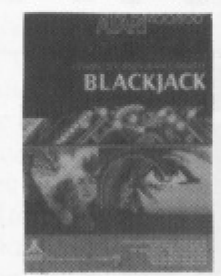
OUR PRICE JUST 99p!

BLACKJACK



Play one of the most popular casino games at home on your Atari. The computer is the dealer and he plays by the rules. You, on the other hand, bet money and decide whether to stand, draw another card or double down in efforts to hit 21.

SOLD OUT



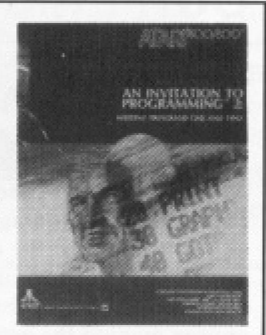
CASSETTE ONLY

INVITATION TO PROGRAMMING 2

Cassette users wishing to learn Basic programming can benefit from this tape based tutorial. The Invitation To Programming 2 set, entitled Writing Your Own Programs, comprises TWO cassettes and TWO workbooks and does not require Invitation To Programming 1. With these actual, on-screen, examples your programming books will come alive and you will be writing your own programs in no time. Start to program now at our bargain price!

Original Price £12.95

OUR PRICE £2.95



CASSETTE ONLY

AVAILABLE AGAIN!

EASY PROGRAMMING FOR YOUR ATARI MICRO

This book went out of print 3 years ago and we have been searching for a replacement ever since. We are absolutely delighted to have found more stocks of one of the best beginner's books ever published. Over the past couple of years whenever someone has phoned for a beginners book on programming we have advised then to try and find a second hand copy of this book - now you can buy it once again, brand new! By the end of this book you'll be writing your own programs, including those with full graphics and sound.

NEW REDUCED PRICE £4.95

130XE HANDBOOK

A programming book which covers not only the machine mentioned in its title but also the 65XE, 800XL and earlier models. The book will take you from the first steps in programming up to writing good, structured programs. One chapter is devoted to the sound capabilities of the XL/XE with details of the sound chip itself allowing you to create more sounds than is normally possible with Basic. Four chapters cover graphics including Display List programming, Player Missile Graphics and redefining characters. There are extensive appendices covering Basic commands, Error codes, sound and graphics references and much more. An ideal companion for novice and intermediate programmers.

Published price £7.95

Published price £7.95

OUR PRICE £3.00

LAST FEW LEFT

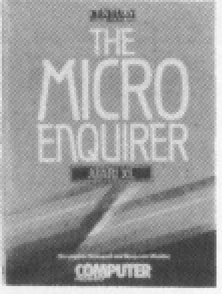
ATARI ADVENTURES

An excellent book written by adventure expert Tony Bridges covering adventures in general and showing how you can write your own adventures on the Atari. This book has in fact formed the basis for some of the adventure listings that have been published in PAGE 6. Tony will take you through examples of commercial adventures with lots of background to all different types of adventure and then show you how all these ideas can be put together in your very own adventure. There is a playable adventure listing called The Eye of The Star Warrior to show you just how it all comes together. Everything you need to know to write your first adventure.



Published price £5.95

OUR PRICE £1.50



MICRO ENQUIRER

A large format book that covers the world of micros in general with some specific Atari sections. The book contains a lot of worthwhile background information on home computing and is ideal for those who are recent converts or who want to expand their general knowledge of computers. It covers all sorts of topics including languages, bulletin boards, CAD, Data Processing, Printers, Artificial Intelligence and much more. There are a few Atari specific programs to illustrate various concepts but generally this book will fulfil a need to know more about the world of computing in general. Large format with over 180 pages.

Published price £8.95

OUR PRICE £2.00

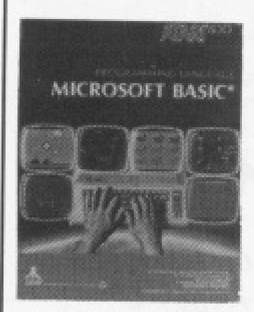
WRITING STRATEGY GAMES

If you are fed up with simple arcade style games but are not sure of the maths required in writing 'thinking' games like chess here is a book that will help you out. To write games of strategy requires not only a knowledge of programming but also of certain mathematical and coding techniques. This book is pitched at an intermediate level, assuming that you already know some Atari Basic. Machine code programmers are also catered for with many hints on how to modify the routines. The book covers the programming theory behind intelligent games before moving on to practical examples of setting up a chess board, moving pieces and playing through. There are sample games for draughts, chess and other strategy games.



Published price £5.95

OUR PRICE £1.50



MICROSOFT BASIC

Microsoft Basic II is now sold out but you can still practice programming in the standard Basic if you have a disk drive. Microsoft Basic is ideal is you want to convert programs from other machines as it contains many of the commands that are missing from Atari Basic. You'll be able to share the creation of programs with other computer owning friends and maybe type in and adapt listings written on other computers.

Recommended price £9.95

OUR PRICE £5.95

DISK ONLY

SKYWRITER

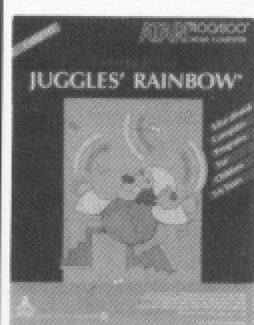


Help your children learn how to create complex words with a fun game that will keep them happy while they learn. A two syllable word is given and the child has to recreate that word from its parts which float across the screen on clouds. A simple concept but one which teaches in an interesting way. Suitable for ages 5 upwards.

Original Price £12.99

OUR PRICE £4.95

ROM CARTRIDGE



JUGGLES RAINBOW

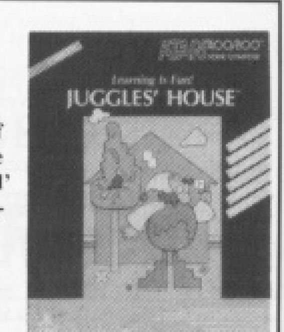
A first computer learning experience for children aged 3 to 6 that teaches the concepts of above, below, left and right plus letter recognition allowing the child to enjoy learning with colours and music and games they can create and play themselves.

OUR PRICE £5.95

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JUGGLES HOUSE



Another for 3 to 6 year olds teaching the concepts of inside, outside, upper and lower with Juggles' House and Toyshelf. each game also includes a 'playground' where children can try out these new ideas for themselves.



OUR PRICE £5.95

SPECIAL OFFER - PURCHASE BOTH JUGGLES PROGRAMS FOR JUST £9.95

CASSETTE ONLY

LAST FEW!



TEXT WIZARD

If you don't need a very powerful word processor but still want to use your Atari to help with producing written documents Text Wizard could be the answer. A simple to use and easy to learn word processor that has the basic features such as search and replace, move and duplicate text and straightforward print formatting including double column print out. The print commands are set for Epson compatible printers. Text Wizard will get you printing without getting you confused.

Original Price £29.95

OUR PRICE £7.95

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TOUCH TYPING



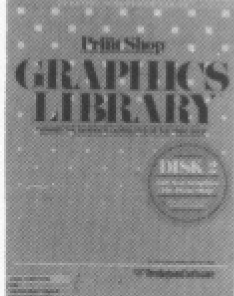
Everyone who uses a computer needs to brush up on their typing and now you can learn to type like a professional typist with this complete tutorial. Touch Typing presents a self paced method of learning by letting you practice typing letters, sentences and paragraphs. The computer determines words per minute, number of errors and your weak points. Random sentences are generated to drill you in those areas. Contains two cassettes and instruction manual.

Previously £19.95.

OUR PRICE £4.95

CASSETTE ONLY

LAST FEW!



PRINT SHOP GRAPHICS

The official PRINT SHOP Graphics Library comprises three separate disks each with 120 graphics and a printed out reference guide of the new icons. Disk 1 covers Holidays, Special Occasions, Sports and more, Disk 3 covers Business, Symbols, Mythology and others. ONLY No.s 1 and 3 NOW AVAILABLE.These are all top quality graphics in the original Broderbund Print Shop packaging.

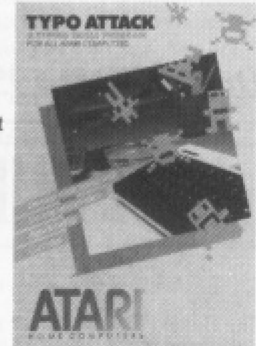
Original Price £12.99 each

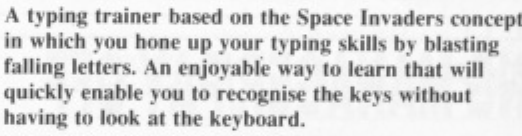
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TYPO ATTACK



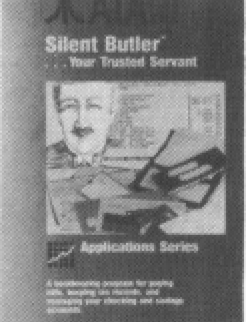


A typing trainer based on the Space Invaders concept in which you hone up your typing skills by blasting falling letters. An enjoyable way to learn that will quickly enable you to recognise the keys without having to look at the keyboard.

Normally £12.95

OUR PRICE £6.95

ROM CARTRIDGE



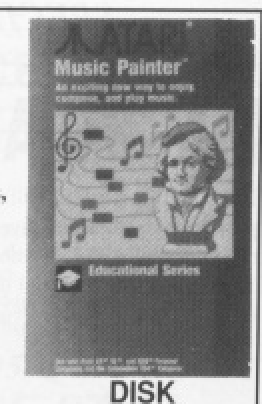
SILENT BUTLER

The all round personal finance planner that keeps track of three bank accounts, maintains income records, reminds you of birthdays, anniversaries and important dates and generally keeps you up to date on your financial status.

OUR PRICE £6.95

DISK ONLY

MUSIC PAINTER



An exciting educational program that helps to teach music by using colours instead of notes. Change the fifteen supplied songs to feature different instruments, make the notes longer or shorter or transcribe your own songs. No musical knowledge required to make your own great music. Children or adults alike will get great satisfaction from being able to create their very own music.

OUR PRICE £7.95

DISK ONLY

A Further Selection

More software for your added enjoyment ranging from adventures to arcade games and serious software. Something for everyone in this selection with several new titles this issue.

CAVERNS OF MARS

LAST FEW! DISK ONLY

Winner of one of the first Atari programming competitions, this was one of the first vertical scrollers and remains a much sought after original game. Descend through the caverns avoiding mines and picking up fuel. Highly playable and addictive, only one or two have made it to the bottom of the cavern to discover the secret that awaits them.

LAST FEW WITHOUT BOX BUT WITH FULL ORIGINAL MANUAL -

LOWER PRICE £4.95

TIMEWISE

REDUCED PRICE

Why not use your Atari as an electronic diary? Timewise allows you to keep track of all your appointments and important dates on a daily, monthly or yearly basis. Now you can dispense with your diary and let your Atari do the work. If you have a printer Timewise allows you to print out the information in a variety of ways.

Originally £22.99

DISK ONLY **OUR PRICE £3.95**

KABOOM

Challenge the Mad Bomber as he tries to bomb you out of sight. Can you catch his bombs and dowse them in time? Or would you like to be the Mad Bomber and try to flatten one of your friends? Lots of excitement for one or two players in this addictive arcade game that won awards for Best Audio and Visual Effects when it was first released. Simple yet addictive.

ROM CARTRIDGE **OUR PRICE £2.95**

ZAXXON

One of the all time classics for the Atari, Zaxxon set new standards when first issued and was copied many times. Pilot your craft across the unique 3 dimensional battlefield shooting enemy fuel tanks, anti-aircraft tanks and missiles before launching off through space for the ultimate conflict with a mighty robot - few have got this far! Zaxxon, often copied, never bettered and NEVER at this incredibly low price!

RRP £7.95 cass/£9.95 disk

DISK OR CASSETTE **OUR PRICE £2.99**

SCREEN DUMP 1020

Owners of the 1020 printer/plotter will be delighted with this utility which has been unavailable for a long time. Now AtariArtist pictures can be dumped to your 1020 in FULL COLOUR. Just boot up the tape, select your favourite picture and let the software do the rest.

CASSETTE ONLY

Originally £14.95 **OUR PRICE JUST £2.95**

PLANETARIUM

BACK IN STOCK!

Fun or education? Both really in this fascinating look at the heavens. Over 1200 stars, 88 constellations, the solar system and more than 300 deep-sky objects are depicted in this program that allows you to view the universe. You can make stellar and planetary maps, study eclipses, learn about latitude and longitude and much more.

1050 DRIVE ONLY
Please state when ordering if you have a US Doubler fitted

Normally £16.95

OUR PRICE £ 6.95

HOME FILING MANAGER/PAY OFF

DISK ONLY

The Home Filing Manager record keeping system that simulates index cards on your Atari, keeps track of almost anything together with The Pay-Off Adventure - your chance to sample an adventure in classic style. This two disk set also includes some top class graphics demos.

SPECIAL PRICE - ONLY £1

PROOFREADER

Users of Atariwriter will be delighted with this, the long lost spelling checker for the Atariwriter cartridge! Proofreader may be loaded alongside Atariwriter to give you instant access to a dictionary of 36,000 words. If that is not enough you can add your own words as you go. Errors are highlighted on screen for correction, unusual words can be saved and you can look up spellings.

DISK ONLY **OUR PRICE £5.95**

MACRO ASSEMBLER

The Macro Assembler will allow you to create your own machine language games and applications five times faster than with the Assembler Editor cartridge and it can assemble as many as 1600 symbol definitions with no limit on program size. You can duplicate code, optionally assemble code and modularise your program. A Program-Text Editor is included.

Normally £19.95

DISK ONLY **OUR PRICE £7.95**

BASIC CARTRIDGE

Why would you want a Basic Cartridge when Basic is already built in to your machine? Well some programs, especially some early public domain programs won't run on the XL/XE but they will if you plug in the old version of Basic. Much more convenient than having to boot in the old Basic from disk and, at this price, worth having just as a backup.

ROM CARTRIDGE **OUR PRICE £3.95**

PIRATE ADVENTURE

"Yo ho ho and a bottle of rum ...". You'll meet up with the pirate and his daffy bird along with many strange sights as you attempt to go from your London flat to Treasure Island. Can you recover Long John Silver's lost treasures? Happy sailing matey. Scott Adams Graphic Adventure #2 brings you a superb Beginner's level adventure complete with graphics and ideal for all ages

DISK ONLY

Original price £19.95

OUR PRICE £7.95

STRANGE ODYSSEY

At the galaxy's rim, there are rewards aplenty to be harvested from a long-dead alien civilization. Fabulous treasures ... advanced technologies far beyond human ken ... All this and more awaits the brave galactic Adventurer. But will you be able to recover the wealth and return home? Prepare yourself for a Strange Odyssey! Scott Adams Graphic Adventure #6 is a Moderate level adventure.

DISK ONLY

Original price £19.95

OUR PRICE £7.95

HARDBALL

American League baseball at it's very best. A highly regarded game - check out the review in Issue 45 'THE best sports simulation on the Atari'. Look over the pitchers shoulder as he throws the ball to the waiting trio of batter, catcher and umpire. In HardBall you can hit, run, steal, blunt and dive, change the fielders and do everything you can do in the real game. For one or two players.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £7.95

GALAXIAN

Another arcade conversion that retains all of the addictiveness of the original and still stands as one of the all time classics. Blast the galaxians as they advance in formation and peel off to attack. With one or two players and 10 skill levels you'll be entertained for a long time. Includes an easy option for beginners.

ROM CARTRIDGE

Normally £12.95

OUR PRICE £6.95

JOUST

Don your helmet and hoist your lance and climb aboard an ostrich in this unusual arcade game! Do battle with the evil Buzzard Riders in deep space. Pterodactyls to the right of you, alien eggs to the left, you must learn to fly so that you won't die so very far from home. All the arcade thrills for one or two players.

ROM CARTRIDGE

Normally £12.95

OUR PRICE £6.95

RESCUE ON FRACTALUS

Ask old hands what was one of the best games ever for the Atari and a good proportion of them will say Rescue on Fractalus. This game from Lucasfilm set new standards in computer games combining a space flight simulator with a rescue mission. Super, ever changing, 3-D scenery as you fly through the mountains to land on the planet and rescue stranded pilots.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £6.95

BALLBLAZER

Another from Lucasfilm, this top quality split screen game takes place in a games arena of the future. You are strapped into a Rotofoil hovercraft-like vehicle that skims over the surface of the playfield at 50 metres per second. The object is simple, just release your Plasmorb through your opponent's goal. Two-player simultaneous play with first person perspective for both players.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £6.95

SUPER BREAKOUT

Breakout was the original simple yet totally addictive game and this enhanced version will provide even more addictive fun. Several variations on the basic theme are available for one to four players (up to 8 on the 400/800!). NOTE that this game requires paddle controllers.

ROM CARTRIDGE

Normally £9.95

OUR PRICE £3.95

STAR RAIDERS 2.

The original Star Raiders is updated with better graphics and sound. Your job is to clear each sector whilst ensuring that the enemy do not overrun planets in another part of the galaxy. It will take skill in deciding which sector to warp to, can you afford to clear a sector or will you have to leave to defend a planet and return later! A great follow up to an all time classic.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £6.95

LODE RUNNER

Another classic, perhaps the best of all platform games. You are a highly trained Galactic commando deep in enemy territory. Your mission is to infiltrate all 75 of the enemy's subterranean levels to recover every last piece of gold. You are equipped with a laser drill pistol but you'll need cunning, speed and agility. Lode Runner includes a unique extra that allows you to create your own levels.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £7.95

TENNIS

Great sports fun either against the computer or another player, singles or doubles. Forehands and backhands, driving approach shots, angled volleys, overhead smashes and tricky lobs - they are all here. You control your position on the court and where you want to hit the ball. The electronic scoreboard dis plays the results. All the action without the sweat!

ROM CARTRIDGE

Normally £12.95

OUR PRICE £6.95

ONE ON ONE

Play basketball with two of America's top players in this great sports simulation which features realistic offensive and defensive moves, fatigue factors, hot streaks, a shot clock, even instant repay and a shattering backboard! Like the game of basketball itself, One-on-One rewards you for playing with your head as well as your hands.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £6.95

FIGHT NIGHT

BACK IN STOCK!

Fight Night brings you all the thrills of the boxing ring as you face five of the most brutal fighters ever. Its five separate battles are total war with relentless action. The Boxing Construction Set allows you and your opponent to create your own perfect boxers, selecting stamina, intellect and style. Step into the ring to pit your perfect boxer against the computer or another opponent. 1/2 players.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £7.95

DESERT FALCON

A version of the classic Blue Max that finds you flying across the desert Indiana Jones style searching for hieroglyphics hidden in the desert sands. You need to survive long enough to destroy the howling Sphinx. The longer you survive and the further you proceed, the more perilous your mission becomes. If you destroy the Sphinx you get to gain the bonus round for even higher points. Four levels.

ROM CARTRIDGE

Normally £14.95

OUR PRICE £7.95

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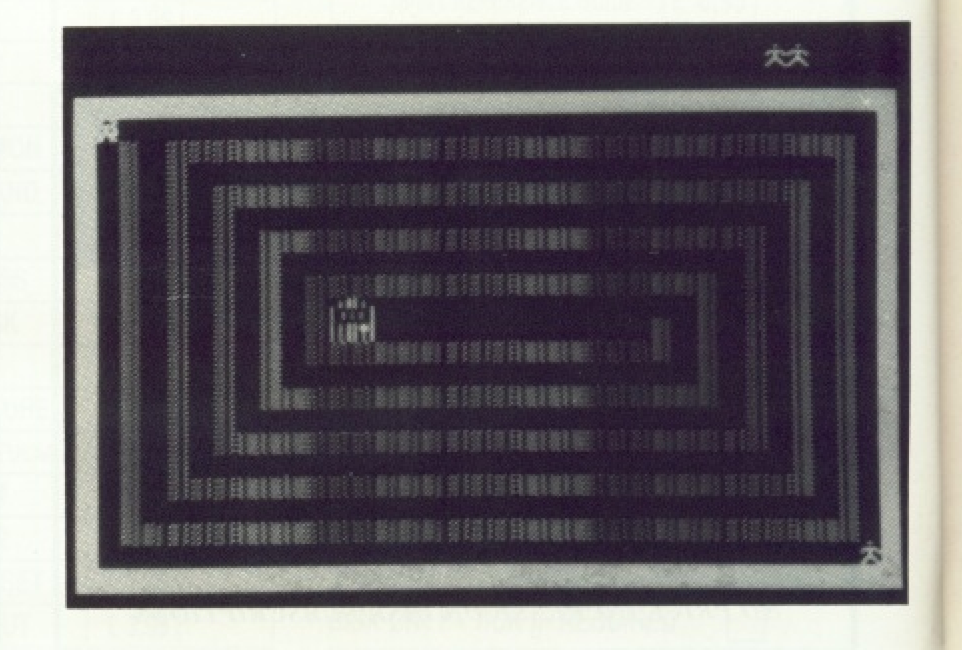
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RUNAROUND II

J. Goodwin's game using the artifacting character set editor in the last issue - check the colours in Graphics 0!



This game uses British artifacting to give a much more colourful display in Graphics 0. Many multicoloured characters are used on screen at the same time, making it look as if machine code has been used when in fact it is all done with Basic. Excellent sound effects and visual tricks enhance the overall effect, making it fun to play.

When you run the program, you will see the title screen with 'PLEASE WAIT' then a set-up screen will ask you to turn your TV colour up so that the artifacted colours are visible and then press a key from 1-8 to adjust the screen so the correct colours are displayed.

The object of the game is to travel around the maze (using a joystick in port 1) to reach the door at the centre while avoiding the wraith who will chase you relentlessly. Being a wraith, he can, of course, walk through walls.

There are three levels, each with an easy or hard option. You can select any level to start with, and if you complete level 3 you will see a sound and graphics explosion.

```
EI 1 REM ********************************
DD 2 REM *         RUNAROUND II         *
RQ 3 REM *              by              *
SN 4 REM *         Joel Goodwin         *
EC 5 REM * ---------------------------- *
BF 6 REM * NEW ATARI USER  - OCT. 1991 *
EO 7 REM ********************************
NN 8 REM
HU 10 GOTO 1000
WJ 99 REM  MAIN GAME LOOP 
NS 100 S=PEEK(ST):IF S=15 THEN WAIT=SPEED
   :GOTO 190
OK 110 X1=X+(S=7)-(S=11):Y1=Y+(S=13)-(S=1
   4)
TG 120 WAIT=5-LEV:LOC=PEEK(SC+X1+Y1*40):I
   F LOC=0 THEN 160
TT 130 IF LOC>128 THEN POKE SC+X+Y*40,0:Z
   =1:RETURN
EE 140 IF LOC=86 THEN POKE SC+X+Y*40,0:RE
   TURN
PL 150 GOTO 190
VK 160 POKE SC+X+Y*40,0
YB 170 X=X1:Y=Y1
SN 180 POKE SC+X+Y*40,85
PI 190 MOVE=MOVE+1:IF MOVE<WAIT THEN 100
EW 200 MOVE=0:POKE SC+GX+GY*40,STORE
XV 210 GX=GX+(X>GX)-(X<GX)
BC 220 GY=GY+(Y>GY)-(Y<GY)
WH 230 STORE=PEEK(SC+GX+GY*40)
CX 240 POKE SC+GX+GY*40,86
OF 250 IF STORE=85 THEN STORE=0:RETURN
KK 260 GOTO THIS
IL 399 REM  ERASE MAZE ROUTINE 
ML 400 COLOR 32:FOR LN=1 TO 19
TC 410 PLOT D(LN,1),D(LN,2):DRAWTO D(LN,3
   ),D(LN,4)
```

RUNAROUND II

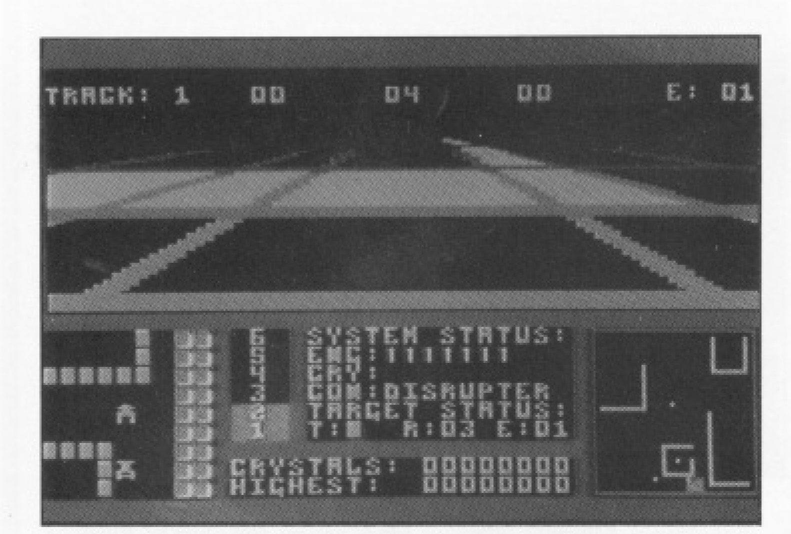
```
CB 420 IF  NOT DEMO THEN SOUND 0,LN*10,8,
   10
KV 430 NEXT LN:PLOT 23,11
PK 440 POSITION 13,11:? #6;"  "
QE 450 POSITION 13,12:? #6;"  "
RM 460 SOUND 0,0,0,0:RETURN
GR 499 REM  DRAW MAZE ROUTINE 
SY 500 POKE 77,0:IF LEV<>1 THEN PX=0:PY=0
   :DX=0:DY=0:GOTO 560
LT 510 IF  NOT DEMO THEN POKE AUD,1
HT 520 FOR LN=1 TO 20:POSITION 3,2+LN:? #
   6;R$
CG 530 IF  NOT DEMO THEN POKE AF1,2*LN+10
   0:POKE AF2,2*LN+111:POKE AC1,175:POKE
   AC2,175
OH 540 NEXT LN
DN 550 COLOR 32:Z=0:PX=-1:PY=-1:DX=-1:DY=
   1:PLOT 4,3
SE 560 RESTORE 690+LEV*10:FOR LN=1 TO 19
LC 570 READ COL:COLOR COL
TB 580 PLOT D(LN,1)+PX,D(LN,2)+PY
YD 590 DRAWTO D(LN,3)+DX,D(LN,4)+DY
QJ 600 Z=(Z=0):PX=DX:PY=DY
TF 610 IF  NOT Z THEN DY=-PY
PK 620 IF Z THEN DX=-PX
CZ 630 IF  NOT DEMO THEN SOUND 0,LN+100,1
   0,15:POKE AUD,1:SOUND 1,LN+101,10,15:P
   OKE AUD,1
EH 640 NEXT LN:IF LEV=1 THEN DRAWTO 13,11
   :PLOT 13,12:DRAWTO 26,12:COLOR 7
GU 650 IF HARD THEN PLOT 23,11
CZ 660 POSITION 13,11:? #6;CHR$(130);CHR$
   (129)
DJ 670 POSITION 13,12:? #6;CHR$(131);CHR$
   (128)
SQ 680 IF DEMO THEN RETURN
FU 690 FOR Z=15 TO 0 STEP -0.5:SOUND 0,LN
   +100,10,Z:POKE AUD,1:SOUND 1,LN+101,10
   ,Z:POKE AUD,1:NEXT Z:RETURN
DU 700 DATA 32,32,32,32,32,32,32,32,32,32
   ,32,32,32,32,32,32,32,32,32
KK 710 DATA 10,12,10,12,10,12,10,12,11,13
   ,11,13,11,13,11,13,14,14,14
NF 720 DATA 16,16,16,16,17,17,17,17,18,18
   ,18,18,19,19,19,19,20,20,20
UP 799 REM  INITIALISE MAZE DATA 
MY 800 DIM D(19,4),R$(34):RESTORE 900
ST 810 FOR LN=1 TO 19
TF 820 FOR Z=1 TO 4
SG 830 READ DAT:D(LN,Z)=DAT
MU 840 NEXT Z
OM 850 NEXT LN
RN 860 R$="5556667778885556667778885556666
   7778"
AZ 870 FOR Z=1 TO 34
ZW 880 R$(Z,Z)=CHR$(VAL(R$(Z,Z)))
TU 890 NEXT Z:RETURN
MR 900 DATA 4,4,4,20,4,21,35,21,35,20,35,
   5
WZ 910 DATA 35,4,6,4,6,5,6,18,6,19,33,19
ZE 920 DATA 33,18,33,7,33,6,8,6,8,7,8,16
VG 930 DATA 8,17,31,17,31,16,31,9,31,8,10
   ,8
ZR 940 DATA 10,9,10,14,10,15,29,15,29,14,
   29,11
BJ 950 DATA 29,10,12,10,12,11,12,12,12,13
   ,27,13
TR 960 DATA 27,12,27,12
VG 999 REM  INITIALISE PROGRAM 
ZS 1000 TITLE=2000:CHAR=3000:ADJUST=15200
   :CLS=15000:GAME=100:WIN=2800
DM 1010 DRAW=500:ERASE=400:MDATA=800:SHOW
   =1500:NUMBER=1400:MUSIC=2500
SB 1020 GOSUB TITLE:GOSUB CHAR:GOSUB MDAT
   A:GOSUB ADJUST
HH 1030 GOSUB CLS:SLEV=1:POKE 1650,15:POK
   E 16,64:POKE 53774,64
WW 1040 COLOR 160:PLOT 2,2:DRAWTO 2,23:DR
   AWTO 37,23:DRAWTO 37,2:DRAWTO 2,2
FE 1050 SC=PEEK(88)+PEEK(89)*256
NU 1060 AF1=53760:AF2=AF1+2:AC1=AF1+1:AC2
   =AF2+1:AUD=AF1+8
UH 1099 REM  DEMO LOOP 
YD 1100 DEMO=1:THIS=1200:MSG=0:ST=1650:SP
   EED=0:GX=3:GY=3:STORE=0
RF 1110 GOSUB SHOW:POKE 20,150
NZ 1200 IF X=GX AND Y=GY THEN X=INT(RND(0
   )*34)+3:Y=INT(RND(0)*20)+3
LQ 1210 IF PEEK(20)>100 THEN GOSUB 1300
SR 1220 IF  NOT STRIG(0) THEN 1600
XE 1230 IF PEEK(53279)=5 THEN SLEV=SLEV*(
   SLEV<3)+1:GOSUB SHOW
QL 1240 IF PEEK(53279)=3 THEN HARD=(HARD=
   0):GOSUB SHOW+30
EG 1250 GOTO GAME
QU 1299 REM  DISPLAY DEMO MESSAGES 
ZE 1300 POKE 20,0:MSG=MSG*(MSG<3)+1:ON MS
   G GOTO 1310,1320,1330
VJ 1310 POSITION 6,0:? #6;"   Press Trigg
   er To Begin  ":RETURN
BD 1320 POSITION 6,0:? #6;"Press Select T
   o Change Level":RETURN
UA 1330 POSITION 6,0:? #6;"Press Option F
   or Difficulty ":RETURN
NL 1399 REM  DISPLAY LEVEL NUMBER 
KL 1400 POSITION 17,9:? #6;"LEVEL"
QQ 1410 ON LEV GOSUB 1460,1470,1480
LT 1420 POKE AUD,1:FOR C=1 TO 2:FOR Z=15
   TO 0 STEP -2:POKE AF1,2*LOG(Z):POKE AC
   1,160+Z
GL 1430 NEXT Z:NEXT C:POKE AC1,0:POKE AUD
   ,0
AE 1440 FOR Z=1 TO 7:POSITION 17,8+Z:? #6
   ;"     ":NEXT Z
AW 1450 RETURN
XY 1460 COLOR 4:PLOT 18,11:DRAWTO 19,11:D
   RAWTO 19,15:RETURN
UR 1470 COLOR 9:PLOT 18,11:DRAWTO 20,11:D
   RAWTO 20,13:DRAWTO 18,13:DRAWTO 18,15:
   DRAWTO 20,15:RETURN
IJ 1480 COLOR 15:PLOT 18,11:DRAWTO 20,11:
   DRAWTO 20,15:DRAWTO 18,15:PLOT 18,13:D
   RAWTO 19,13:RETURN
IG 1499 REM  DISPLAY DEMO MAZE 
ZI 1500 LEV=SLEV:POKE SC+GX+GY*40,STORE:G
   X=3:GY=3:X=3:Y=3:STORE=0
JT 1510 POSITION 16,11:? #6;"          "
   :POSITION 16,12:? #6;"    "
ZL 1520 GOSUB ERASE:GOSUB DRAW
CI 1530 POSITION 16,12:IF HARD THEN ? #6;
   "Hard":GOTO 1550
KF 1540 ? #6;"Easy"
UM 1550 POSITION 16,11:? #6;"Level ";
AN 1560 ON LEV GOTO 1570,1580,1590
BC 1570 ? #6;"One":RETURN
NK 1580 ? #6;"Two":RETURN
QB 1590 ? #6;"Three":RETURN
MR 1599 REM  CONTROL ROUTINE 
SS 1600 LEV=SLEV:POKE SC+GX+GY*40,STORE:C
   OLOR 32:PLOT 16,11:DRAWTO 26,11:PLOT 1
   6,12:DRAWTO 19,12
WR 1610 PLOT 6,0:DRAWTO 33,0:GOSUB ERASE
NF 1620 LIVES=3:THIS=100:ST=632:DEMO=0
DY 1630 COLOR 21:FOR Z=1 TO 3
MV 1640 PLOT 30+Z,0
SX 1650 FOR C=15 TO -15 STEP -3:SOUND 0,2
   40/Z,10,15-ABS(C):NEXT C:NEXT Z
CT 1660 GOSUB NUMBER:GOSUB DRAW:SPEED=2^(
   4-LEV)
AQ 1670 X=36:Y=22:GX=3:GY=3:STORE=0:MOVE=
   0
```

continued

RUNAROUND II

```
CF 1680 POKE SC+GX+GY*40,86:POKE 20,20:Z=1
XY 1690 IF PEEK(20)>20 THEN POKE 20,0:POKE SC+X+Y*40,85*Z:Z=(Z=0)
IO 1700 IF PEEK(632)=15 AND STRIG(0) THEN 1690
GS 1710 Z=0:POKE SC+X+Y*40,85:GOSUB GAME
MO 1720 IF Z=1 THEN 1780
GV 1730 FOR Z=0 TO 4:FOR C=10 TO 0 STEP -5:SOUND 0,C+31,10,15:SOUND 1,C+32,10,15:NEXT C:NEXT Z
KP 1740 SOUND 0,0,0,0:SOUND 1,0,0,0:LIVES=LIVES-1:COLOR 32:PLOT 33-LIVES,0:POKE SC+GX+GY*40,STORE
OG 1750 IF LIVES THEN 1670
BT 1760 GOSUB ERASE:POSITION 15,0:? #6;"GAME  OVER":M=0:GOSUB MUSIC
OJ 1770 GOTO 1100
NQ 1780 GOSUB WIN:M=LEV:GOSUB MUSIC
BO 1790 POKE SC+GX+GY*40,STORE
UZ 1800 LEV=LEV+1
RB 1810 IF LEV<4 THEN GOSUB ERASE:GOTO 1660
EZ 1820 POKE AUD,7:THIS=0:RESTORE 1980:COLOR 32:PLOT 31,0:DRAWTO 33,0
EL 1830 FOR Z=20 TO 0 STEP -0.8
FW 1840 POKE SC+GX+GY*40,86
PJ 1850 FOR C=1 TO Z/2:NEXT C
SN 1860 POKE AF1,Z+200:POKE AF2,Z+101:POKE AC1,175:POKE AC2,175:POKE SC+GX+GY*40,214
RD 1870 FOR C=1 TO Z/2:NEXT C:POKE AC1,0:POKE AC2,0
VZ 1880 NEXT Z:POKE SC+GX+GY*40,STORE
PQ 1890 Z=-1:C=1
EH 1900 Z=Z+1:IF Z=10 THEN Z=0:IF THIS<>10 THEN POSITION 16,12:? #6;"SUCCESS!":POSITION 16,13:? #6;"SUCCESS!"
BG 1910 IF C THEN READ COL:IF COL=-1 THEN FOR C=175 TO 160 STEP -0.5:POKE AC1,C:POKE AC2,C:NEXT C:GOTO 1960+THIS
RW 1920 COLOR COL:PLOT Z+3,Z+3:DRAWTO 36-Z,Z+3:DRAWTO 36-Z,22-Z:DRAWTO Z+3,22-Z:DRAWTO Z+3,Z+3
ZU 1930 C=(C=0)
GQ 1940 POKE AUD,1:POKE AF1,200-Z*2:POKE AF2,202-Z*2:POKE AC1,175:POKE AC2,175
RZ 1950 GOTO 1900
MT 1960 M=4:GOSUB MUSIC:THIS=10:RESTORE 1990:GOTO 1890
ON 1970 GOTO 1100
MJ 1980 DATA 16,17,18,22,32,137,143,21,132,-1
OS 1990 DATA 32,32,32,32,32,-1
EY 1999 REM  TITLE SCREEN 
FB 2000 FONT=PEEK(106)-4:POKE 106,FONT-1:GRAPHICS 18:POKE 559,0:POKE 16,64:POKE 53774,64
NM 2010 DL=PEEK(560)+PEEK(561)*256:FOR Z=0 TO 8:POKE 1650+Z,PEEK(DL+Z):NEXT Z
VF 2020 POKE 560,114:POKE 561,6:DL=1650
SH 2030 POKE DL+9,15
EE 2040 FOR G=10 TO 21:POKE DL+G,112:NEXT G
CU 2050 POKE DL+22,6:POKE DL+23,65:POKE DL+24,PEEK(560):POKE DL+25,PEEK(561)
TZ 2060 POSITION 3,0:? #6;"runaround  ii":POSITION 2,2:? #6;"BY JOEL GOODWIN"
QF 2070 POKE 712,32:POKE 708,32:POKE 709,32:POKE 710,14:POKE 711,32
UE 2080 POKE 559,34:SOUND 0,0,0,0:POKE 53775,3
KM 2090 T=1:V=48:GOSUB 2230
HS 2100 T=0:V=144:GOSUB 2230
QE 2110 POSITION 4,6:? #6;"please wait"
UF 2120 FOR B=0 TO 15 STEP 0.3
XN 2130 POKE 711,160+B:POKE 53760,30:POKE 53762,60:POKE 53761,160+B:POKE 53763,160+B:POKE 53768,6
CF 2140 NEXT B
PL 2150 FOR C=15 TO 21
CR 2160 FOR D=112 TO 0 STEP -16
MG 2170 E=E+1:POKE 53760,30+E:POKE 53762,60+E
BJ 2180 POKE DL+C,D
DQ 2190 NEXT D
CG 2200 NEXT C
UH 2210 FOR F=15 TO 0 STEP -0.4:POKE 53761,160+F:POKE 53763,160+F:NEXT F
AK 2220 RETURN
DQ 2230 FOR B=0 TO 15 STEP 0.75
BI 2240 POKE 708+T,V+B:POKE 53760,T*4:POKE 53762,4+T*4:POKE 53761,160+B:POKE 53763,160+B:POKE 53768,122
CK 2250 NEXT B
UY 2260 FOR B=15 TO 0 STEP -1.5
BW 2270 POKE 53761,160+B:POKE 53763,160+B
CT 2280 NEXT B
BF 2290 RETURN
AY 2499 REM  MUSIC ROUTINE 
HK 2500 RESTORE 2550+M*50
ZI 2510 READ J:IF J=-1 THEN SOUND 0,0,0,0:SOUND 1,0,0,0:RETURN
YN 2520 POKE AUD,1:POKE AF1,J:POKE AF2,J+1
OQ 2530 FOR Z=15 TO 0 STEP -5:POKE AC1,160+Z:POKE AC2,160+Z:NEXT Z
QR 2540 GOTO 2510
YI 2550 DATA 121,128,144,136,136,136,121,128,144,136,136,136,60,64,72,68,68,68,60,64,72,68,68,68,-1
UZ 2600 DATA 85,96,85,96,60,68,60,102,114,102,114,72,81,72,81,-1
WF 2650 DATA 57,114,57,114,57,114,53,108,53,108,53,108,64,128,64,128,64,128,68,136,68,136,68,136,-1
JP 2700 DATA 64,64,60,64,64,72,64,64,60,64,64,76,64,64,81,64,64,85,64,64,91,-1
DF 2750 DATA 91,85,91,81,91,76,91,72,91,64,91,60
DI 2760 DATA 91,85,91,81,91,76,91,72,91,64,91,60
UU 2770 DATA 72,85,102,121,144,173,144,121,102,91,91,91,91,91,91,-1
II 2799 REM  SOUND ON REACHING CENTRE 
QO 2800 Z=6:FOR C=1 TO 12:SOUND 0,10,6,Z:SOUND 1,14,6,Z:SOUND 2,18,6,Z:FOR D=0 TO 8:NEXT D:SOUND 0,0,0,0
AJ 2810 SOUND 1,0,0,0:SOUND 2,0,0,0:Z=Z-0.5:NEXT C
AW 2820 RETURN
PI 2999 REM  LOAD CHARACTER SET 
PM 3000 RESTORE 3000:J=1535
AX 3010 READ Z:IF Z<>-1 THEN J=J+1:POKE J,Z:GOTO 3010
ZE 3020 Z=USR(1536,57344,FONT*256)
EW 3030 DATA 104,104,133,213,104,133,212
NV 3040 DATA 104,133,215,104,133,214,162
JR 3050 DATA 4,160,0,177,212,145,214
OU 3060 DATA 200,208,249,230,213,230,215
ZW 3070 DATA 202,208,240,96,-1
UE 3080 FOR Z=FONT*256+512 TO FONT*256+703
DE 3090 READ C:POKE Z,C:NEXT Z:RETURN
ZQ 3100 DATA 254,182,162,162,182,182,182,182
SY 3110 DATA 191,183,183,182,254,110,110,110
AE 3120 DATA 254,246,246,182,191,187,187,187
DH 3130 DATA 191,182,182,182,182,182,182,182
```

SUNSTAR



At the dawn of the twenty-first century a powerful organisation known as the Xxarion Star Corporation commissioned sixteen orbital solar grids to utilise the sun's energy. These grids created special energy crystals that enabled travel through space at the speed of light. Now, over a century later, a build-up of disruptive energy pulses is preventing the normal supply ships from collecting the vital crystals. In an effort to recover as many as possible before the entire system disintegrates, the Corporation have designed an extraordinary craft called the Sun Star which is equipped with the awesome speed and fire-power that's essential for this challenging mission. All they need now is a suitably fearless pilot - er, any volunteers?

SUNSTAR is a shoot 'em up quite unlike any other. The screen is designed around several components - the top half comprises a 'through-the-cockpit' 3-D perspective of the energy grid, whilst the bottom half is divided into three parts. The rightmost section provides a birds-eye view of the entire playfield, the central portion is where you'll find all the necessary status info and on the left there's a short range scanner to help you keep track of nearby targets. The object of the game is to locate, chase and fire at 'disrupter pulses' which appear as white squares on the grid. If you hit a pulse enough times, it will disappear and leave behind a crystal which you must quickly pass over - otherwise it wipes out any others you may have collected. Once you have ten crystals you should head for a revolving 'warp gate' and fire laser bolts at a 'hyperwarp' cell, which transports you to a subsequent level.

Because energy is in very short supply, it's important not to be too 'trigger happy'. You should first use the grid map to pinpoint your position, then switch to the short range scanner to locate the nearby targets, and use the 3-D display whilst in hot pursuit. Unfortunately, the disrupters never hang around for more than a second or two, and there are lots of obstructions that will sap your reserves should you fail to avoid contact.

Sunstar is a novel variation on the shoot 'em up theme and has been competently packaged, but I must admit that I've had this game for a long while and have never become particularly addicted. Try and have a go before you part with any money.

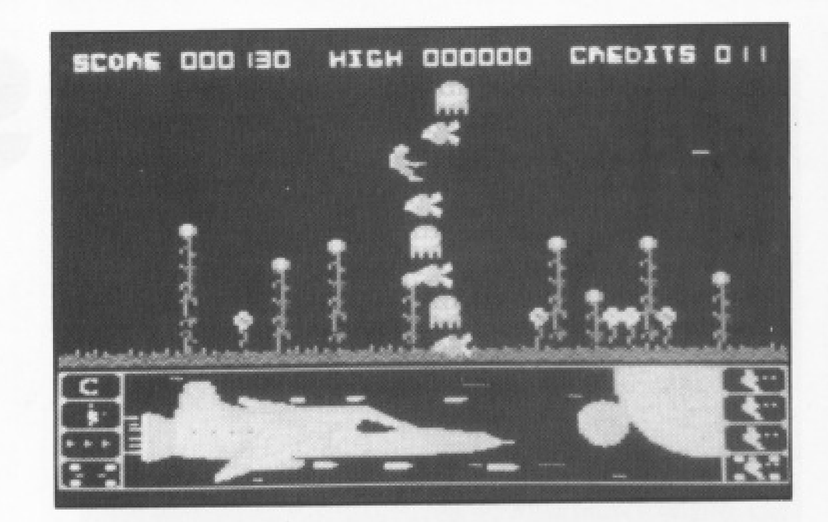
Title:	**SUNSTAR**
Publisher:	**CRL**
Price:	**£7.95 cassette**
Players:	**1**
Loading:	**10'45"**

Reviewed by Paul Rixon

RUNAROUND II

```
PO 3140 DATA 255,211,165,211,165,211,165,
   255
PA 3150 DATA 82,164,82,164,82,164,82,164
PB 3160 DATA 41,82,41,82,41,82,41,82
IW 3170 DATA 74,37,74,37,74,37,74,37
PV 3180 DATA 164,82,164,82,164,82,164,82
ML 3190 DATA 255,165,211,165,211,165,211,
   255
GW 3200 DATA 82,74,37,74,37,164,82,164
HZ 3210 DATA 74,37,164,82,164,82,74,37
LF 3220 DATA 82,41,82,82,41,82,41,41
PC 3230 DATA 82,164,82,164,164,82,164,82
CI 3240 DATA 37,82,84,82,37,34,36,82
DD 3250 DATA 255,211,169,211,169,211,169,
   255
AS 3260 DATA 82,0,164,82,180,82,0,164
AY 3270 DATA 164,0,82,180,82,164,0,82
IZ 3280 DATA 82,0,41,90,41,82,0,41
RT 3290 DATA 41,0,82,57,82,41,0,82
GP 3300 DATA 148,0,148,148,180,148,0,148
DG 3310 DATA 24,0,126,219,24,60,102,195
LU 3320 DATA 102,195,126,219,219,255,102,
   231
VI 3330 DATA 148,148,148,148,148,148,148,
   148
QJ 14999 REM  CREATE ADJUSTABLE GR.0 
XX 15000 GRAPHICS 0:POKE 710,0:POKE 752,1
   :? CHR$(125);:POKE 756,FONT:XSC=PEEK(8
   8)+PEEK(89)*256:XSC=XSC-4
TY 15010 POKE XSC+3,0
VY 15020 POKE 1536,112-(XVT*16):POKE 1537
   ,112:POKE 1538,112
TR 15030 FOR XD=0 TO 23:POKE 1539+XD*3,82
   :XSHI=INT(XSC/256):XSLO=XSC-XSHI*256
ZC 15040 POKE 1540+XD*3,XSLO:POKE 1541+XD
   *3,XSHI
PM 15050 XSC=XSC+40:NEXT XD
YC 15060 POKE 1539+XD*3,65:POKE 1540+XD*3
   ,0:POKE 1541+XD*3,6
WU 15070 POKE 54276,XHZ:POKE 560,0:POKE 5
   61,6:POKE 709,10:RETURN
YP 15099 REM  ADJUSTING ROUTINE 
AD 15100 XVT=INT(XADJ/5):XHZ=XADJ-XVT*4-1
EW 15110 POKE 54276,XHZ:POKE 1536,112-(XV
   T*16)
DS 15120 RETURN
FX 15199 REM  COLOUR ADJUSTMENT SCREEN 
ZX 15200 GOSUB 15000:POKE 752,1:? :FOR B=
   1 TO 3:POSITION 5,9+B:? "◢◢◢◢◢◢◢◢◢◢ ┐┐┐
   ┐┐┐┐┐┐ ┯┯┯┯┯┯┯┯┯┯":NEXT B
AV 15210 ? "     Red       Green      Yello
   w   "
FS 15220 POSITION 2,19:? "PRESS NUMBERS F
   ROM 1 TO 8 UNTIL ALL":? "  THREE COLOU
   RS ABOVE ARE CORRECT"
SK 15230 ? "      THEN PRESS THE SPACE BAR
   .":POSITION 2,2:? "THIS PROGRAM USES A
   RTIFACTED COLOURS"
NW 15240 ? " TO SEE THEM PROPERLY YOU MUS
   T TURN":POSITION 8,4:? "YOUR TV COLOUR
    UP HIGH!"
ZG 15250 OPEN #5,4,0,"K:"
DF 15260 GET #5,XK:IF XK=32 THEN CLOSE #5
   :RETURN
AW 15270 XK=XK-48:IF XK<1 OR XK>8 THEN 15
   260
HP 15280 XADJ=XK:GOSUB 15100
EH 15290 GOTO 15260
```

MISSION ZIRCON



Tiger Developments, new to Atari software publishing, have a number of programs lined up. With Mission Zircon they are staking their reputation in a traditional 'blast the aliens' style horizontal scroller.

Apparently, Princess Cirzona is about to be married but the grand ceremonial Zircon crown has been stolen. Being the King's faithful servant you've jumped at the chance to head off into a remote corner of the Universe, with orders not to return unless you find the missing crown. Equipped with a jet-suit and a 'ZW' gun, you embark on a journey into the dangerous caverns of the evil empire.

Well, as you've probably guessed it's one of those games where the principal objective is simply to survive. There are eight levels in all, with plenty of determined opposition from kamikaze fighters, killer strawberries, the sea of tentacles and many other surprises. As well as firing at the nasties you must carefully negotiate the exceptionally ragged landscapes. Destroying alien ships increases your score and entitles you to a bonus credit. A sufficient number of credits can eventually be exchanged for goodies such as a limited shield and improved weaponry. Contact with the enemy results in both a reduction of lives and of extra weapons, though you are always provided with a basic gun.

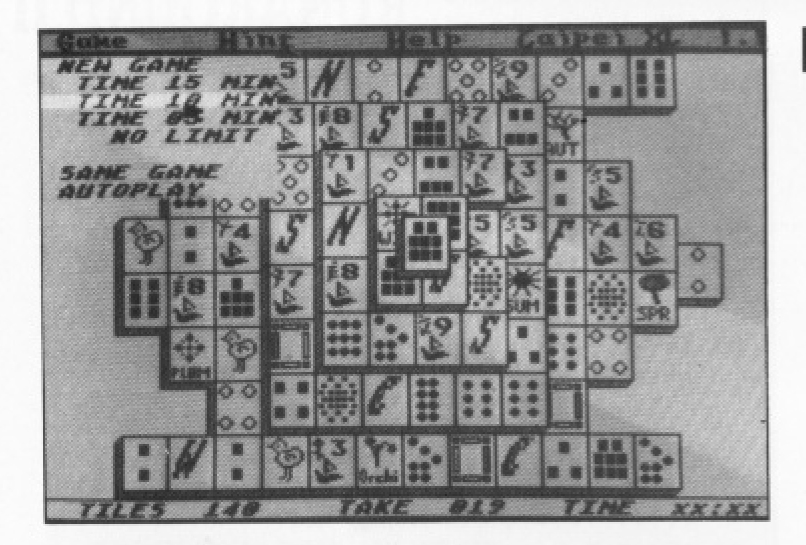
The background scenery is very impressive and obviously a huge amount of time has been spent perfecting the design of all eight stages. With the benefit of cheat mode I can tell you that the higher levels are really worth seeing - each completely different to its predecessor. The title page is excellent too. Unfortunately the definition and control of the King's assistant isn't up to the same standard, and although there are two settings of responsiveness it's far too difficult to manoeuvre him through the unforgiving caverns. This is a great pity, since in every other respect Mission Zircon shows much professionalism.

Some of the criticisms I frequently make of arcade games - such as unsilencable music and non-existent pause modes - do not apply here. If the non-animated assistant was replaced by the likes of Captain Crumble or Universal Hero, Mission Zircon would be the perfect shoot 'em up. As it stands it's a challenging game with superb backdrop graphics and several interesting features. Be sure to give Tiger Developments a great deal of support.

Title:	**MISSION ZIRCON**
Publisher:	**Tiger Developments**
Price:	**£4.99**
Format:	**Cassette/Disk**
Players:	**1**

Reviewed by Paul Rixon

TAIPEI



Here's another computerised board game featuring the 'Mah Jongg' symbolic tiles - they seem to be extremely popular in Germany! Although it shares a similar appearance with Zador (reviewed last issue), the game itself has a lot more in common with Activision's excellent Shanghai. If you are familiar with either or both of these titles, you'll know what to expect.

The screen depicts a multi-layered pile of the oriental tiles, viewed from an overhead perspective. At its highest point the pile is initially five layers high and it's composed from a total of thirty six tiles - each from one of nine symbolic groups. The task in hand is to dismantle the board by repeatedly taking tiles away from the pile. The catch is that you can only remove matching pairs of tiles and these must be 'free' in the sense that they can slide sideways without being hindered by the surrounding pieces. Most tiles will only match with others bearing an identical symbol - the exceptions being flowers and seasons which can be paired with any symbol within their respective group.

The board is displayed in high-resolution black and white graphics and is bordered by a number of pull-down menus on the top row of the screen and status information below. The latter informs you of the number of tiles remaining and the number of legal possibilities for the current move. If you get stuck you can instruct the computer to highlight the various alternatives. You can also back-up several moves to get out of awkward situations. The advice given is to think carefully before you act, or you will lose before you even know it! Once you've mastered the basic game you can make things a little more tricky by setting a limit on the time allowed for completion. But if you want to be really lazy, you can sit back and watch the computer play by itself! All the options are accessible via an ST-style pointer that's controlled entirely by the joystick.

Taipei is an addictive game with a great deal of lasting appeal. You don't have be adept with a joystick or even good at puzzles to master the game. You can play it by yourself or invite a group of friends to yell out the moves! The important thing is that it's a stress-free challenge, and therefore an invaluable respite from mega-blast invaders!

Title:	**TAIPEI**
Publisher:	**RE Software/Page 6**
Price:	**£6.95**
Format:	**Disk**
Players:	**1**

Reviewed by Paul Rixon

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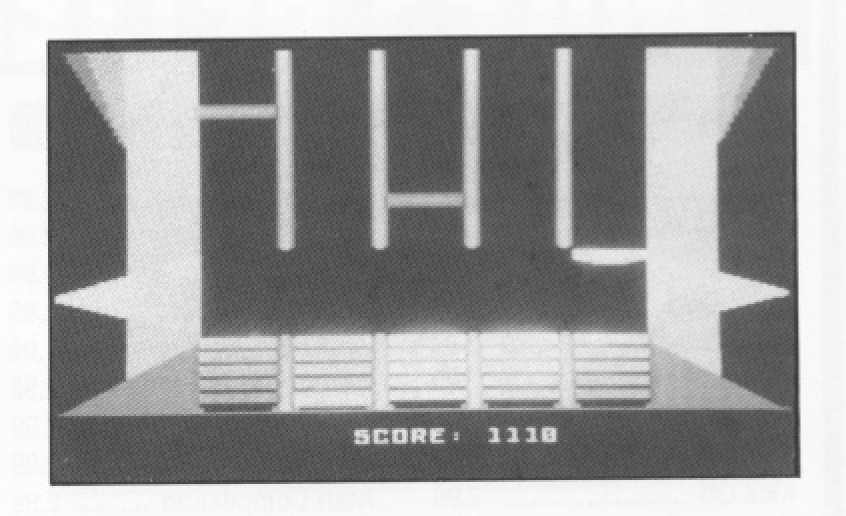
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GLAGGS IT!



I suspect the title of this game is more meaningful to German readers than to the rest of us! GLAGGS IT is basically a clone of Domark's Klax which was one of last year's big hits on the ST. The only major difference is that the graphics consist of simple two dimensional walls rather than the elaborate 3-D conveyor belt system of the ST version. With this exception, gameplay is virtually identical.

Your job on each level is to collect differently coloured tiles as they emerge from chutes descending from the top of the screen. The tiles must then be deposited in one of five bins below. The objective is to form 'Glaggses' by placing the tiles in three-high stacks of the same colour - the respective tiles then disappear and earn you an all-important points bonus. For each screen there is a specified quota of Glaggses to achieve and as you progress onto the higher stages, the number of different colours increases and the harder it becomes to organise them all. You can hold up to five pieces before dropping them into the bins, but as the task gets harder you have less and less time to think before you make your move. You're only entitled to a few misses, one too many and the game is abruptly over. For added variety you may be required to form diagonal lines of matching colours. A status line below the main playfield displays all the relevant details prior to commencing each stage.

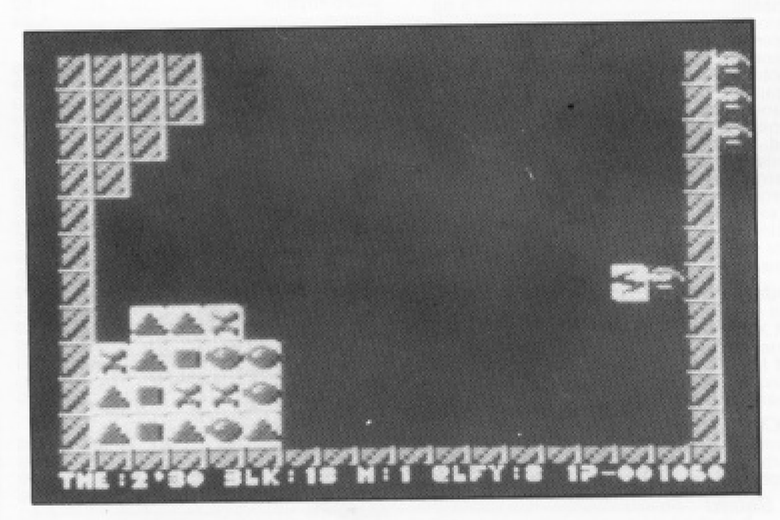
The graphics are fairly basic (though adequate) and the sound effects sparse but the main quality of Glaggs It - like Klax - is its addictive nature. You can start the game at level zero, five, ten or fifteen so players of all abilities should have fun without finding it too hard or too easy. An added incentive is a chance to etch your name in the disk-stored hi-score table of the top Glaggsers. One small niggle is the apparent lack of a pause facility - once you start the game, you're forced to see it through to the end!

Puzzle games have proved to be equally as popular as the traditional arcade shoot 'em ups. It's not difficult to suppose why. Glaggs It is a game that will keep you coming back for more, even if you don't like it in the first place!

Title:	**GLAGGS IT!**
Publisher:	**Hyperon Soft/Page 6**
Price:	**£6.95**
Format:	**Disk**
Players:	**1**

Reviewed by Paul Rixon

PLAYER'S DREAM 1



Two games on one disk: Plot is an addictive arcade puzzle game similar to Puzznic on the ST and Skiing is a tricky vertical scroller all about, erm ... skiing! A Player's dream?

Plotter is a sort of bouncy 'face' who lives in the right hand portion of your screen. By guiding Plotter up and down and pressing the fire button, you can make him shoot a block (or 'stone') at a pile of others located on the opposite side of the playfield. You can fire directly or rebound off the walls to hit the pile from above. Each stone bears a symbol and when two similarly marked ones collide an explosion occurs, destroying the target stone and enabling the others to drop into the vacant space. The process continues until the missile meets a differently marked obstacle - whose symbol is then transferred onto the stone used by Plotter for his next attempt. Every level has a corresponding quota of stones that must be removed to qualify for subsequent rounds. Because of the possibility that you'll end up in a no-win situation, the space bar activates a 'thunder-stone' that will match any symbol in the pile. Of course, this facility is strictly limited so you have got to think very carefully before you hit that button. Don't think for too long though, or the clock will catch you out!

The continuous music based on 'air on a G String' (like the Cigar ad's) is well composed and the sound effects are good quality too. The graphics are necessarily simple but perfectly adequate for the purpose.

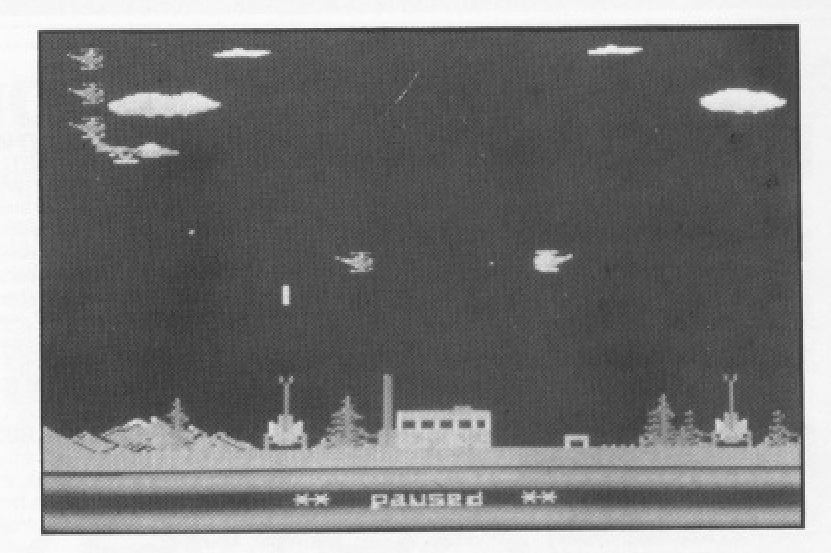
If you should eventually tire of Plot (it's unlikely to be for some time!) you can re-boot the disk and load in Skiing - or Skiabfahrt as the Germans know it! This is a straightforward scroller in which you attempt to manoeuvre your skier from the start position to the finishing flag in the time limit specified. Naturally there are lots of obstacles designed to trip you up and if they succeed you will lose valuable time. Triumph is rewarded by transportation to the next level - failure is punished by forcing you back to the beginning!

The graphics aren't stunning (didn't I once type in something similar from a C&VG mag?) but the game is surprisingly addictive and it's a worthwhile bonus to a generally good value package.

Title:	**PLAYER'S DREAM 1**
Publisher:	**Ke-Soft/Page 6**
Price:	**£6.95**
Format:	**Disk**
Players:	**1**

Reviewed by Paul Rixon

INVASION



Not to be confused with a very old and unremarkable budget wargame from Mastertronic, this INVASION is actually an exciting horizontal shoot 'em up recently imported from Germany.

As the pilot of a military helicopter, your mission is to construct a temporary bridge over a river in readiness for the invasion of your tank division into hostile territory. First you should locate your HQ and activate a switch concealed in the trees. This informs your comrades that you're ready for the next bridge section, which duly appears next to the building. You must carefully hover over the section and hoist it up with a rope from your chopper. It can now be transported to the river and dropped into position. Simple eh? Unfortunately not! Four enemy choppers constantly hound your activities, firing missiles to blast you out of the sky. You can retaliate with bombs and rockets but there is an endless supply of nasties to replace those you manage to annihilate. There are also several ground-to-air missile launchers situated throughout the landscape, which of course you must endeavour to avoid.

Occasionally an enemy plane will fly across and release a parachute over the partially-completed bridge. This is a bomb and an appropriate warning sound informs you that you must find and eliminate it quickly, otherwise a section of the bridge will be destroyed. The first level isn't too demanding but later on you have really got to be a slick tactician to get that bridge in place! Personally I found the best strategy was to knock out the launchers first and attack the choppers by dropping bombs on top of them. Oh, and don't forget to keep those rotor blades away from the trees!

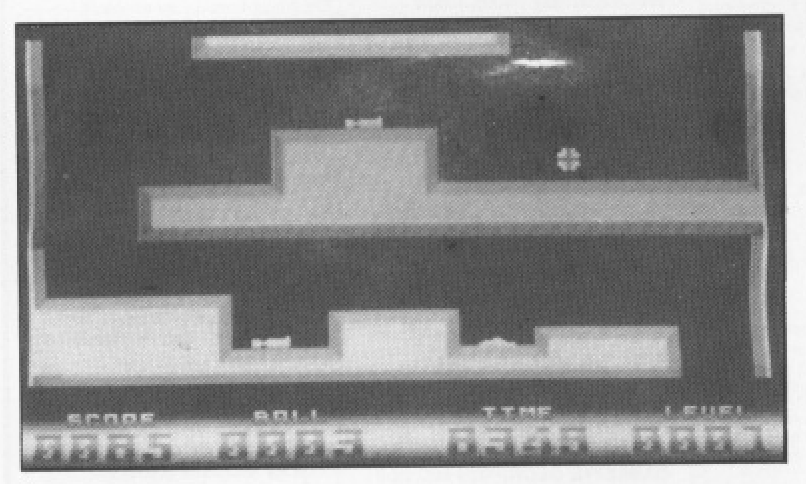
Invasion's graphics are commendable - the landscapes are artistically drawn and shading is used to excellent effect. There are some nice touches in the Lucasfilm-style intro graphics and title page. There's plenty of good animation too. I can't complain about the sound, since the music doesn't seem to be too annoying and the other noises are reasonably effective.

If you want a shoot 'em up that isn't just a shoot 'em up - one that offers a more worthwhile excuse for its existence - then take a look at Invasion. Addictive and challenging are words I could use to describe it, but most importantly it looks good, feels good and by golly ...

Title:	**INVASION**
Publisher:	**R&E Software/Page 6**
Price:	**£6.95**
Format:	**Disk**
Players:	**1**

Reviewed by Paul Rixon

RUBBER BALL



Fancy a game of Rubber Ball? What, you mean you haven't heard of this intriguing game from German publisher Raindorf? Well, nor had I and it turns out to be one of the few game concepts that you probably won't have encountered before!

Imagine you're a rubber ball bouncing through the angled corridors of a vast air conditioning system. Obvious hazards are nails and chewing gum lodged in the pipes, but air ventilators can help you back on track and air-pumps seem to be quite useful too. Get the idea? In fact, there's no need to imagine - in this game you have an opportunity to actually become a rubber ball!

After loading you're first treated to a short digitised soundtrack - proof that given the programming expertise, anything is possible in 64K! Hit the trigger and you land with a bounce in the first of twelve challenging levels, each consisting of several screens formed by rainbow-coloured platforms. A joystick controls the horizontal movements of the rubber ball whilst vertical actions are influenced purely by simulated gravitational forces. Once you've rolled off the top platform, the ball begins bouncing more dramatically - or to be precise, the ball stays in roughly the same position whilst the whole screen scrolls smoothly up and down to create a believable bouncing effect. Friction gradually slows up the ball so you must plan your moves to avoid getting stuck in a hopeless situation. If you do, you will be forced to forfeit one of the six available lives.

Having completed a level by collecting a specified number of air-pumps, you're awarded bonus points relating to the time remaining on the counter. If it should run down before you've finished the task you again lose a life, but there are extras on offer after every fifth level. Nails are a certain danger whilst the chewing gum can sometimes be a help, as well as a hindrance. The ventilators are important too.

Apart from an occasional hiccup in the bouncing algorithm, Rubber Ball is beyond criticism in every respect. The graphics are clear and colourful and the game will have you bouncing into the early hours to try and master the higher levels! German authors have created some top notch 8-bit games and I'm delighted these have at last found their way into the UK. Give your Atari a treat this Christmas!

Title:	**RUBBER BALL**
Publisher:	**Raindorf Soft/Page 6**
Price:	**£9.95**
Format:	**Disk**
Players:	**1**

Reviewed by Paul Rixon

contact ... contact ... contact ... contact

EXCHANGE

ST DISK DRIVE: Atari SF314 (double sided) drive urgently required in top condition. Exchange for brand new Cumana slim line double sided drive. Sounds crazy but there's a good reason. Phone Les or Sandy at PAGE 6. Tel. 0785 213928

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PENPALS: I would like to hear from any Atari 8-bit fans, near and far. I have a 65XE + 1050 disk drive with Happy and US Doubler. All letters answered. Paul Holford, 7, Gaywood Close, Beechwood, Birkenhead, Merseyside, L43 7TT, England

TRANSDISK IV!: Contact wanted with anybody who has mastered this little beauty of a program and help needed with Tomahawk, or anybody in the Herts area whose Atari needs another friend. Contact Dave Osborn, 31 Avocet, Letchworth, Herts, SG6 4TH. Tel. 0462 674905

TURKISH PENPAL: Hi!. I'm Oguzhan Imrak. I've an Atari 800XL (256k Rambo XL), 1050 disk drive, XC12 tape and 1029 printer. If you want to have a good contact, please write to me. I've large software collection (utilities, games, demos etc.) All letters answered. Oguzhan Imrak, Mektep Cad. Zafer sok, Zafer Apt. No: 15/7, 81570 KUCUKYALI, Istanbul, Turkey

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HELP!: Help and advice, instructions for Microsoft Basic ref. CX8126 dated 1981 and Datasoft Graphic Generator. All reasonable costs postage paid. Nick Ashby, 140 Linden Avenue, Eastcote, Ruislip, Middx, HA0 8UB

SOCCER: Anyone interested in a Play By Mail soccer league? Send SAE to me for details. A. Deters, 31 Hucknall Garth, Bransholme, Hull, HU7 4LR

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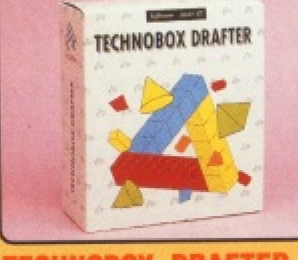
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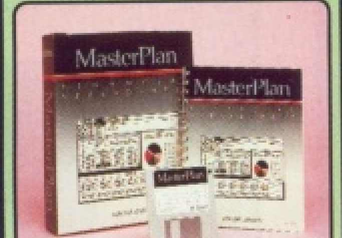
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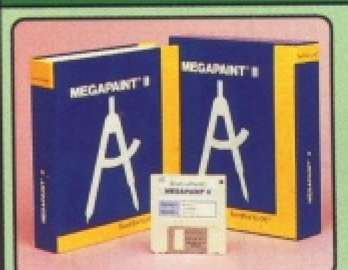
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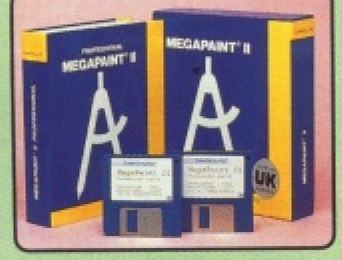
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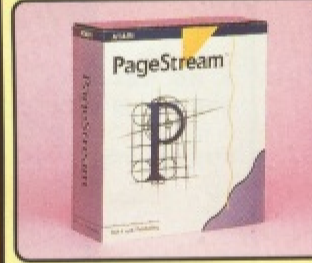
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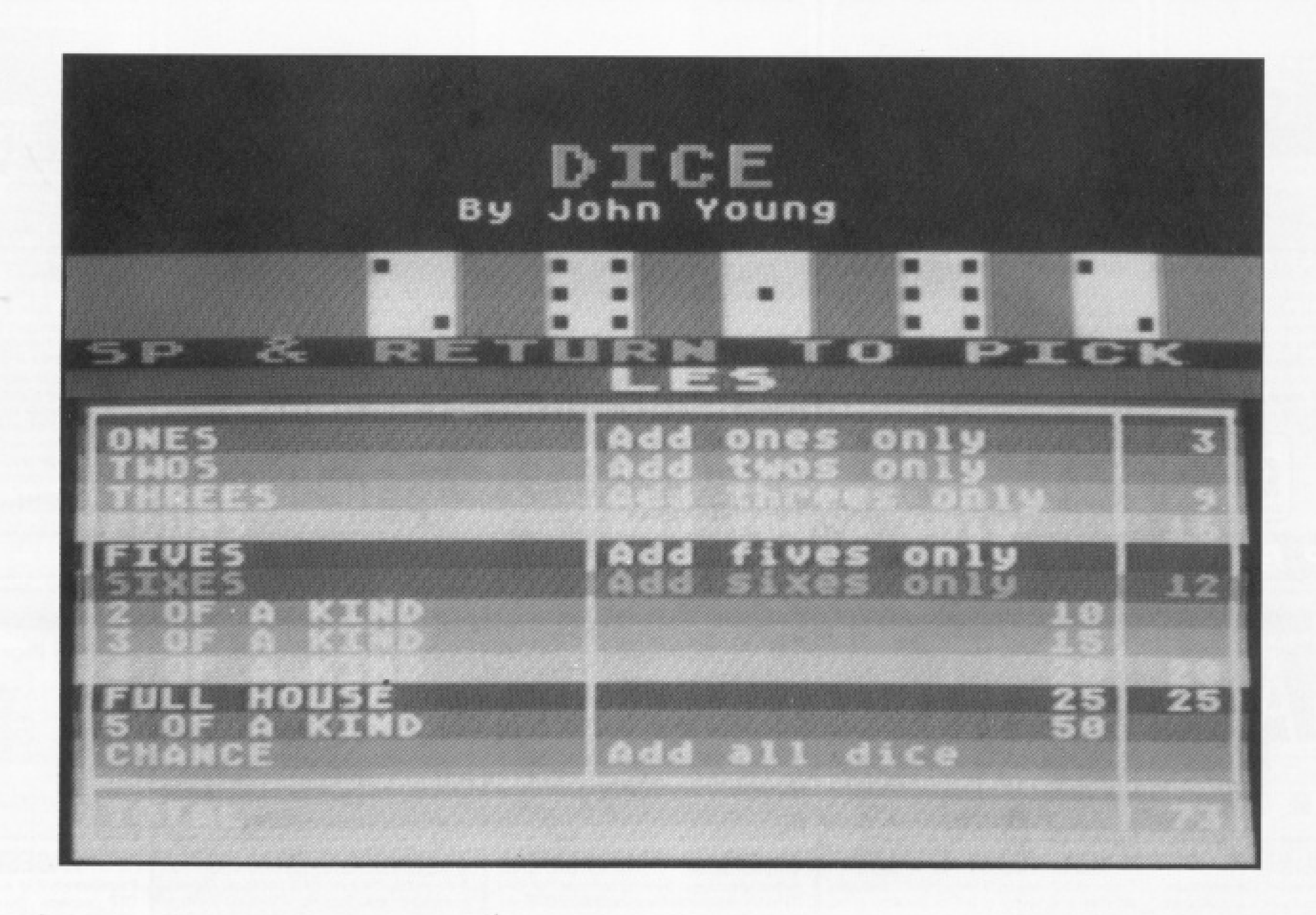
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DICE!



by John Young

One of the most popular computer games is Yahtzee with many different versions available. Dice! is a similar game that will hold your attention for a good while.

The game is for two to four players (although it can still be enjoyed by one player) and is controlled by the keyboard. Little instruction is necessary as the objectives are self explanatory with the scores available for each combination shown on screen. Dice are rolled by using the space bar and the keys 1 to 5 toggle a 'hold' on and off for each die. Once you have decided to keep a throw, or when you have thrown three times in a turn, the Return key will end the go enabling you you place the throw in the best position.

Dice! uses a very nicely coloured screen obtained by the use of Display List Interrupts and should prove a popular diversion for all ages.

DICE!

```
EI 1 REM ********************************
MD 2 REM *            DICE             *
RQ 3 REM *             by              *
KK 4 REM *         John Young          *
EC 5 REM * --------------------------- *
XX 6 REM * NEW ATARI USER - Dec/Jan 91 *
EO 7 REM ********************************
NN 8 REM
CT 100 DIM SCORE(12,4),TOTAL(4),DICE(5),H
   OLD(5),FACE$(54),NUMOF(6),SCR$(2),TOTA
   L$(3),NAME$(40),TEMP$(10)
QG 110 FACE$="$$$$%$$$$%$$$$$$$$%%$$$%$$$%
   %$%$$$%$%%$%$%$%$%%$%%$%%$%"
WZ 120 CLOSE #1:OPEN #1,4,0,"K:"
VD 130 GOSUB 2900
RM 140 GOSUB 3000
QS 150 GOSUB 1000
SE 160 GOSUB 1300
SS 170 GOSUB 1400
GD 180 FOR PLAYER=1 TO NUMPLAYERS
LE 190 TOTAL(PLAYER)=0
ZJ 200 NAME$((PLAYER-1)*10+1,PLAYER*10)="
   "
YS 210 FOR CAT=1 TO 12:SCORE(CAT,PLAYER)=
   -1:NEXT CAT
RR 220 NEXT PLAYER
SX 230 GOSUB 1500
TL 240 GOSUB 1600
UW 250 GOSUB 2800
BY 260 IF YN=89 OR YN=121 THEN 170
ZB 270 CLOSE #1:POKE 702,64
PC 280 POKE 82,2:GRAPHICS 0
OJ 290 END
SH 997 REM
FJ 998 REM  SET UP SCREEN DISPLAY
SN 999 REM
TZ 1000 DL=PEEK(560)+256*PEEK(561)
PW 1010 POKE DL+3,71
CO 1020 RESTORE 1280:FOR X=7 TO 12:READ A
   :POKE DL+X,A:NEXT X
JM 1030 FOR X=13 TO 27:POKE DL+X,130:NEXT
   X
JI 1040 SETCOLOR 0,1,10:SETCOLOR 1,0,14:S
   ETCOLOR 2,0,0:SETCOLOR 3,4,10
LO 1050 FOR X=0 TO 8:READ A:POKE 1536+X,A
   :NEXT X
IC 1055 FOR X=2 TO 10 STEP 2
JJ 1060 POKE 1536+6+X,112+X:POKE 1536+7+X
   ,0
ZV 1065 POKE 1536+16+X,128+X:POKE 1536+17
   +X,0
VE 1070 POKE 1536+26+X,144+X:POKE 1536+27
   +X,0:NEXT X
KP 1075 POKE 1536+38,156:POKE 1536+39,0
ZT 1080 POKE 82,0:POKE 752,1
ZC 1090 POSITION 8,0:? "DICE
         By John Young"
XG 1100 POSITION 0,6
AJ 1110 ? "┌──────────────────┬────────
   ───┬────┐";
FI 1120 ? "|ONES              |Add ones onl
   y   |    |";
TN 1130 ? "|TWOS              |Add twos onl
   y   |    |";
WQ 1140 ? "|THREES            |Add threes o
   nly |    |";
OP 1150 ? "|FOURS             |Add fours on
   ly  |    |";
JA 1160 ? "|FIVES             |Add fives on
   ly  |    |";
HC 1170 ? "|SIXES             |Add sixes on
   ly  |    |";
NR 1180 ? "|2 OF A KIND       |
     10|    |";
WL 1190 ? "|3 OF A KIND       |
     15|    |";
PF 1200 ? "|4 OF A KIND       |
     20|    |";
OS 1210 ? "|FULL HOUSE        |
     25|    |";
UR 1220 ? "|5 OF A KIND       |
     50|    |";
VG 1230 ? "|CHANCE            |Add all dice
       |    |";
NQ 1240 ? "├──────────────────┴────────
   ───┼────┤";
VC 1250 ? "|TOTAL
       |    |";
XD 1260 ? "└───────────────────────────
   ───┴────┘";
AY 1270 RETURN
HK 1275 REM --- DISPLAY LIST DATA ---
DZ 1280 DATA 134,4,4,132,134,134
LX 1285 REM --- COLOUR TABLE DATA ---
WP 1290 DATA 0,38,0,198,58,52,58,84
KD 1297 REM
SE 1298 REM  INSTALL DLI ROUTINE
KL 1299 REM
DJ 1300 DIM DLI$(44)
NS 1310 RESTORE 1380
RU 1320 FOR X=1 TO 44:READ A:DLI$(X,X)=CH
   R$(A):NEXT X
YQ 1330 HI=INT(ADR(DLI$)/256):LO=ADR(DLI$
   )-HI*256
EQ 1340 POKE 512,LO:POKE 513,HI:POKE 5428
   6,192
CI 1350 POKE 54286,192
ZC 1360 POKE 559,34
BA 1370 RETURN
AR 1380 DATA 72,152,72,172,0,6,185,2,6,14
   1,10,212,141,24,208,185,3,6,141,26,208
   ,238,0,6,238
EP 1390 DATA 0,6,173,0,6,205,1,6,144,5,16
   9,0,141,0,6,104,168,104,64
KF 1397 REM
JX 1398 REM  GET NUMBER OF PLAYERS
KN 1399 REM
WJ 1400 POSITION 2,5:? "players (2-4) ?"
GZ 1410 GET #1,K
ZF 1420 IF K>=49 AND K<=52 THEN NUMPLAYER
   S=K-48:RETURN
PO 1430 GOTO 1410
KH 1497 REM
KB 1498 REM  GET PLAYERS' NAMES
KP 1499 REM
HM 1500 FOR PLAYER=1 TO NUMPLAYERS
AG 1510 L=0:POSITION 0,5:? "PLAYER ";PLAY
   ER;" enter name":POSITION 20,5
MC 1520 POKE 702,0
HH 1530 GET #1,K
AH 1540 IF (K>=97 AND K<=122 OR K=32 OR K
   =46) AND L<10 THEN L=L+1:TEMP$(L)=CHR$
   (K):? CHR$(K);
TW 1550 IF K=126 AND L>0 THEN TEMP$(L)="♥
   ":L=L-1:? CHR$(K);
AV 1560 IF K=155 THEN 1575
RB 1570 GOTO 1520
HU 1575 IF L=0 THEN 1590
TL 1580 NAME$((PLAYER-1)*10+1+(10-L)/2,(P
   LAYER-1)*10+(10-L)/2+L)=TEMP$:POSITION
    20,5:? "          "
HN 1590 NEXT PLAYER:RETURN
KJ 1597 REM
GO 1598 REM  PLAY GAME
KR 1599 REM
PW 1600 FOR TURN=1 TO 12
HR 1610 FOR PLAYER=1 TO NUMPLAYERS
ZA 1620 GOSUB 2300
BE 1630 GOSUB 1800
YG 1640 GOSUB 2100
YW 1650 GOSUB 2200
GM 1660 NEXT PLAYER
CT 1670 NEXT TURN
BJ 1680 RETURN
KN 1797 REM
TB 1798 REM  THREE GOES AT ROLLING DICE
KV 1799 REM
OH 1800 POSITION 0,5:? "SP-throw  OR  RET
   URN"
CE 1810 POSITION 25,5:? NAME$((PLAYER-1)*
   10+1,PLAYER*10)
TC 1820 FOR X=1 TO 5:HOLD(X)=0:NEXT X
TH 1830 FOR GO=1 TO 3
HQ 1840 GET #1,K
FU 1850 IF GO=1 THEN POSITION 0,5:? "hold
    1  2  3  4  5          ":GOTO 1890
```

continued

DICE!

```
IX 1860 IF K=155 THEN RETURN
FR 1870 IF K>=49 AND K<=53 THEN HD=K-48:H
   OLD(HD)= NOT (HOLD(HD)):POSITION 3+HD*
   3,5:? CHR$(32+HOLD(HD)*184)
ZL 1880 IF K<>32 THEN 1840
BQ 1890 FOR N=1 TO 5
NT 1900 IF HOLD(N)=0 THEN GOSUB 2000
HN 1910 NEXT N
PD 1920 NEXT GO
BA 1930 RETURN
KR 1997 REM
ZS 1998 REM  THROW A DIE
KZ 1999 REM
KE 2000 T=INT(RND(0)*6)
ZU 2010 SOUND 0,100-T*10,10,6
GZ 2020 POSITION 4+N*6,2:? FACE$(T*9+1,T*
   9+3)
QR 2030 POSITION 4+N*6,3:? FACE$(T*9+4,T*
   9+6)
AJ 2040 POSITION 4+N*6,4:? FACE$(T*9+7,T*
   9+9)
RD 2050 DICE(N)=T+1
HP 2060 SOUND 0,0,0,0
AV 2070 RETURN
KA 2097 REM
PP 2098 REM  COUNT NOS OF DICE SCORES
KI 2099 REM
IL 2100 BEST=0:PAIR=0
YL 2110 FOR NUM=1 TO 6
JI 2120 NUMOF(NUM)=0
WP 2130 FOR D=1 TO 5
XV 2140 IF DICE(D)=NUM THEN NUMOF(NUM)=NU
   MOF(NUM)+1
DE 2150 NEXT D
UP 2160 IF NUMOF(NUM)>BEST THEN BEST=NUMO
   F(NUM)
IY 2170 IF NUMOF(NUM)=2 THEN PAIR=1
HM 2180 NEXT NUM
BD 2190 RETURN
KC 2197 REM
CT 2198 REM  SELECT CATEGORY TO SCORE
KK 2199 REM
OD 2200 FOR CAT=1 TO 12:IF SCORE(CAT,PLAY
   ER)=-1 THEN 2208
XA 2205 NEXT CAT
EB 2208 POSITION 0,5:? "SP & RETURN to pi
   ck"
UK 2210 GOSUB 2400:SCR=AVSCR:GOSUB 2600
YU 2220 OLD=CAT:COL=PEEK(1536+8+CAT*2)
JY 2230 POKE 1536+8+CAT*2,38
HF 2240 GET #1,K
EM 2250 IF K=32 THEN CAT=CAT+1:SOUND 0,10
   0-CAT*3,0,8:POKE 53768,192
TD 2260 IF K=155 THEN POKE 1536+8+OLD*2,C
   OL:POKE 53768,0:GOSUB 2500:RETURN
ON 2270 IF CAT=13 THEN CAT=1
AY 2280 IF SCORE(CAT,PLAYER)<>-1 THEN CAT
   =CAT+1:GOTO 2270
PQ 2290 POSITION 37,6+OLD:? "  ":POKE 153
   6+8+OLD*2,COL
UV 2295 SOUND 0,0,0,0:GOTO 2210
KE 2297 REM
NO 2298 REM  FILL IN SCORESHEET
KM 2299 REM
UV 2300 SOUND 0,100,10,8
XY 2310 FOR CAT=1 TO 12
RT 2315 IF CAT=6 THEN SOUND 0,150,10,6
KX 2320 SCR=SCORE(CAT,PLAYER)
ON 2330 IF SCR=-1 THEN SCR$="  ":GOTO 235
   0
AO 2340 GOSUB 2600
PE 2350 POSITION 37,6+CAT:? SCR$
XA 2360 NEXT CAT
HY 2370 SOUND 0,0,0,0
BN 2380 GOSUB 2700
BH 2390 RETURN
KG 2397 REM
TO 2398 REM  CALCULATE AVAILABLE SCORE
KO 2399 REM
DM 2400 AVSCR=0:IF CAT<7 THEN AVSCR=CAT*N
   UMOF(CAT)
BV 2410 IF CAT>6 AND CAT<10 AND BEST>=CAT
   -5 THEN AVSCR=10+(CAT-7)*5
NY 2420 IF CAT=10 AND BEST=3 AND PAIR THE
   N AVSCR=25
NM 2430 IF CAT=11 AND BEST=5 THEN AVSCR=5
   0
ZY 2440 IF CAT=12 THEN FOR D=1 TO 5:AVSCR
   =AVSCR+DICE(D):NEXT D
AX 2450 RETURN
KI 2497 REM
IL 2498 REM  UPDATE TOTAL
KQ 2499 REM
AZ 2500 SCORE(CAT,PLAYER)=AVSCR
VU 2510 TOTAL(PLAYER)=TOTAL(PLAYER)+AVSCR
AZ 2520 GOSUB 2700
MR 2530 FOR FREQ=60 TO 20 STEP -5
ZD 2540 SOUND 0,FREQ,0,14-INT(FREQ/10)
IA 2550 NEXT FREQ:SOUND 0,0,0,0
SD 2560 POSITION 0,5:? "        hit a key
   "
HU 2570 GET #1,K
KK 2597 REM
MN 2598 REM  DISPLAY SCORE
KS 2599 REM
WO 2600 SCR$="  ":SCR$(3-LEN(STR$(SCR)))=
   STR$(SCR)
OY 2610 POSITION 37,6+CAT:? SCR$
AS 2620 RETURN
KM 2697 REM
SK 2698 REM  DISPLAY TOTAL
KU 2699 REM
PA 2700 TOTAL$="   ":TOTAL$(4-LEN(STR$(TO
   TAL(PLAYER))))=STR$(TOTAL(PLAYER))
EE 2710 POSITION 36,20:? TOTAL$
AU 2720 RETURN
KO 2797 REM
OU 2798 REM  END OF GAME
KW 2799 REM
KX 2800 BESTSC=0:WINNER=0
HW 2810 FOR PLAYER=1 TO NUMPLAYERS
DQ 2820 IF TOTAL(PLAYER)>BESTSC THEN BEST
   SC=TOTAL(PLAYER):WINNER=PLAYER
GI 2830 NEXT PLAYER
FX 2840 POSITION 0,5:? NAME$((WINNER-1)*1
   0+1,WINNER*10);" wins!!"
AO 2850 POSITION 21,5:? "PLAY AGAIN (Y/N)
    ?"
MS 2855 POKE 764,255:COL=PEEK(709):HUE=IN
   T(COL/16)*16
IP 2860 FOR LUM=0 TO 14
KF 2870 SETCOLOR 1,HUE,LUM:SOUND 0,LUM*5,
   10,8
XD 2880 IF PEEK(764)=255 THEN NEXT LUM:GO
   TO 2860
OI 2890 GET #1,YN:POKE 709,COL:SOUND 0,0,
   0,0:? "↑
         ":RETURN
KQ 2897 REM
EC 2898 REM  COPY CHARACTER SET
KY 2899 REM
GV 2900 POKE 106,PEEK(106)-4
QD 2910 RAMSET=PEEK(106)*256
SU 2920 GRAPHICS 0:POKE 559,0
ZQ 2930 DIM RELOCATE$(34)
SO 2940 RESTORE 2980
XV 2950 FOR X=1 TO 34:READ A:RELOCATE$(X,
   X)=CHR$(A):NEXT X
VI 2960 A=USR(ADR(RELOCATE$),RAMSET)
OO 2970 POKE 756,PEEK(106):RETURN
ZA 2980 DATA 104,104,133,207,104,133,206,
   169,0,133,204,169,224,133,205,162,4,16
   0,0,177,204,145,206,136,208
AL 2990 DATA 249,230,205,230,207,202,208,
   242,96
KS 2997 REM
KF 2998 REM  REDEFINE CHARACTERS
LA 2999 REM
JS 3000 RESTORE 3030
HO 3010 FOR X=0 TO 15:READ A:POKE RAMSET+
   32+X,A:NEXT X
AH 3020 RETURN
EQ 3030 DATA 170,170,170,170,170,170,170,
   170
MT 3040 DATA 170,170,190,190,190,190,170,
   170
```



FUN SCHOOL 4

Kiddies everywhere (and, let's face it, a few mums and dads) will be eagerly awaiting the next instalment in the Fun School series which should be in the shops round about now (scheduled for late October release).

Old favourites Teddy and Freddy the Frog are back in the Under Fives and 5 to 7s but there has been major ructions in the 8 to 11s with Robbie the Robot ousted in favour of Sammy the Spy. Apparently Sammy has more 'street cred'! Sammy will be found zipping around the world for geography and history lessons as well as staying at home for maths, general knowledge and timetables.

Teddy is getting right up to date (cool, my man!) with Reeboks and baseball cap as he cavorts around with art, maths, words, karaoke (can you stand it?) and more. Just imagine, hundreds of toddlers crooning 'My Way'!

Freddy the Frog will entertain the 5 to 7s with his skateboard covering sequences, maths, word sorting and others including a typing tutor to help with computer literacy. Freddy comes fully animated including belly flops into a pool from a high diving board!
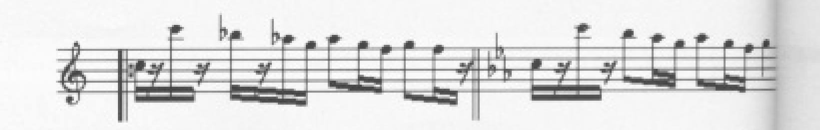
Look out for Fun School 4. Seems to be another winner.





All pictures from FUN SCHOOL 4 for 5 to 7s





John S Davison tries a Midi program intended as an educational tool but which has other uses

One of the more unusual pieces of ST MIDI software I've come across recently is MIDIA from C-Lab, producers of the world famous Notator sequencer and music publishing package. MIDIA was originally conceived as an educational program, but it's also found wide use as a MIDI analysis tool. Its purpose is to open up the mysteries of MIDI, giving the user a clear insight into the meaning of all those bits and bytes that go whizzing up and down the MIDI cables between an ST and any attached MIDI device. It runs on any ST(E), but requires a high resolution monochrome monitor and attached MIDI device, ideally a keyboard synthesiser.

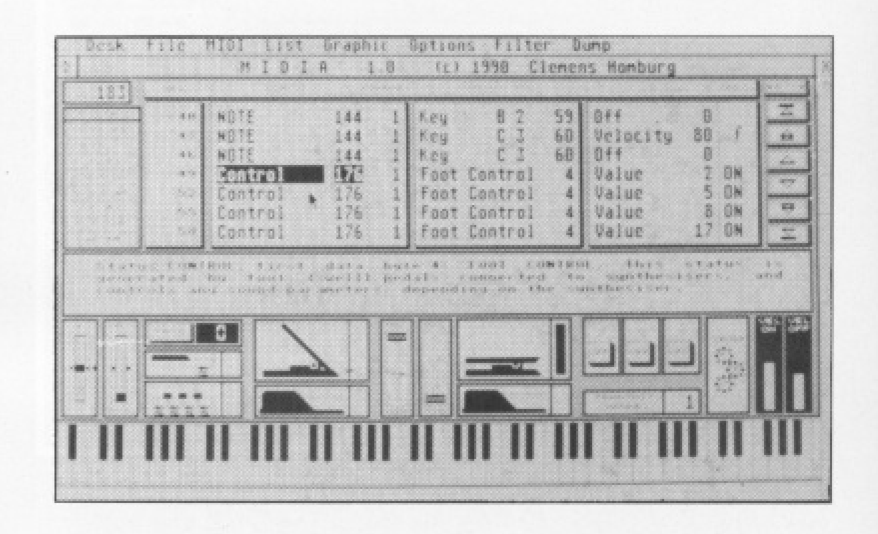
Basically, it's a monitoring program. It sits in your ST waiting for MIDI data to arrive via the ST's MIDI IN port, generated by the attached MIDI keyboard. On detecting the data, MIDIA immediately displays it on the screen as a list of MIDI commands. But instead of the usual incomprehensible stream of numeric gobbledegook it translates each individual MIDI event into English, displayed on its own line in the list. You can still see that numeric data, but alongside you're shown exactly what it means.

SCROLLING DATA

A MIDI keyboard can produce huge quantities of MIDI data in a short time, particularly if you use certain controllers, such as pitch bend, modulation, or aftertouch. For instance, in one short session I generated about 10,000 MIDI commands! Obviously, this volume of data won't fit onto one screen, so MIDIA uses a scrolling system to allow you to quickly move back and forth through it at will. Want to know more about a particular event in the list? Just click on it, and a detailed explanation appears in a window below. Wonderful stuff!

You can also "thin out" the data to make it easier to understand, by filtering out MIDI commands in which you're not interested. Individual filter buttons remove Note On, Note Off, Aftertouch, Pitch Bend, Controller, Program Change, and System messages - singly or in any combination. They're not erased from the input buffer, just removed from the display, so you can easily view them again if required. You can also filter various events completely from the input stream, so they never get into the list at all.

MIDIA will even handle System Exclusive data, possibly one of the most difficult areas of MIDI to understand. For instance you can upload voice patch data from the synth, inspect it, and save it away on disk for later reloading and downloading to the synth again. If you're very brave you can even edit the data first, but this needs a detailed understanding of your synth's System Exclusive dump layout. MIDIA can't help here, as dumps are different for each model of synth. Details are usually available in the synth's instruction manual.



The bottom third of the screen contains a whole bunch of icons representing all the main controllers found on a MIDI keyboard. These include the keyboard itself, pitch wheel, modulation wheel, aftertouch, sustain pedal, volume pedal, etc. As you operate each controller on the keyboard you see its icon on the screen react accordingly. Play the keyboard and the appropriate keys on the onscreen MIDI keyboard get highlighted. Operate the pitch wheel, and its icon moves similarly! It's possible to allocate your choice of controller type to individual icons, so you can customise the display however you wish.

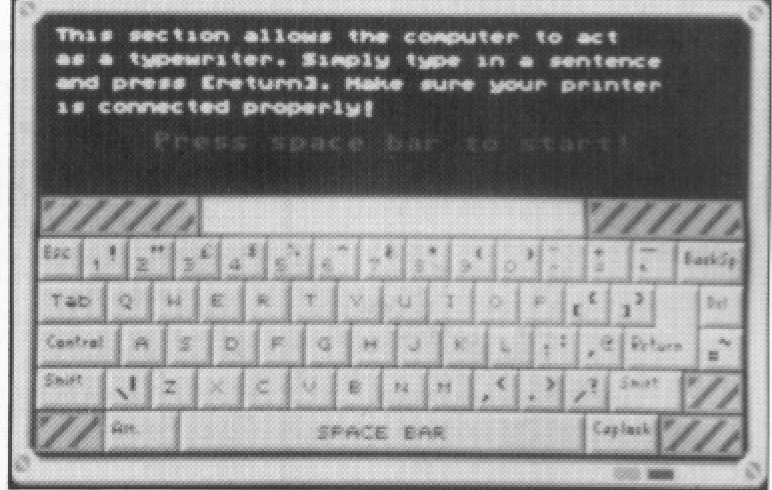
WORKS BOTH WAYS!

Now for the clever bit! The program works in the reverse sense too. You can replay the event list over MIDI to determine its effect on the synth/keyboard. You can also operate the icons in real-time with the mouse - click on the MIDI keyboards keys and the notes play on your synth. Click on the sustain pedal, and notes played on the real keyboard will now sustain! It's great for trying out the effect of accessory controllers you haven't bought yet, such as that sustain pedal. These actions can also optionally generate MIDI data and place it in the event list, as if produced by a real MIDI keyboard. The event list can also be edited, so you can add, delete, and change data as required, with a built-in calculator available to help you if needed.

As you'd expect with a C-Lab product, MIDIA does everything it's supposed to do without fuss or hassle. It's a real professional piece of software, and this is reflected in its price of around £67 (cheaper if you shop around). You get your money's worth though, whether you're a beginner who simply wants to understand the intricacies of MIDI or an expert who needs a good MIDI analysis and faultfinding tool. If you're serious about MIDI this program makes a worthwhile addition to your software toolkit.

JUNIOR TYPIST

As computers become more widespread in everyday life the ability to use a computer keyboard is becoming more important. Most people get by with the old 'hunt and peck' system of typing, and while this may be OK for occasional keyboard use, it's totally inadequate if you need to key in large quantities of data or text. The answer is to learn to touch type, or at least to use the right fingers to press the keys.



I suspect that, as with a piano keyboard, the earlier you start learning the easier it is. School Software must think along the same lines, as they've now added Junior Typist to their fast expanding range of educational programs for the ST. It's designed to teach the basic elements of touch typing to children in the 4 to 10 years age group, but there's no reason why adults shouldn't use it too. It doesn't aim to produce expert touch typists overnight, but rather to ensure users start off in the right way. Those interested in fully developing their skills can then go on to more advanced forms of tuition elsewhere.

The program has five major functional areas. These consist of basic onscreen program operating instructions; a short tutorial on basic keyboard skills; a typing game; several typing/spelling games; and a typewriter mode. Program control (as opposed to typing practice) is mainly by function keys or mouse, making it extremely easy to use. No manual was supplied with the review copy, and wasn't really needed.

The tutorial shows you the main body of the ST keyboard, i.e. the 'typewriter' part only, without function keys, cursor block, or numeric pad. Using some neat graphics with good use of colour it then explains the use of 'home keys', and which keys to operate with which finger on each hand. It would have been useful if the package included a version of this in reference card form.

At each stage the program provides appropriate examples for you to type; first single letters, then small phrases and sentences. As you type it checks your accuracy, telling you the number of correct and incorrect keystrokes made. When typing complete sentences it also tells you your typing speed in words per minute.

Speed and accuracy can be developed by playing the arcade game. Words fall from the top of the screen and you have to correctly type them to zap them before they hit the bottom - just as in some of the 8-bit typing tutors of old! Points are awarded depending on how quickly you zap each word. A life is lost for each word reaching the bottom, and three lost lives ends the game. To encourage improved typing performance a record of the session's high score is kept. You can set eight levels of difficulty, with higher levels using longer words and faster action. Each level usually begins with slow moving single words, and as play continues the action gets faster and multiple words appear onscreen.

The program also includes three simple typing and spelling games, called Words, Sentences, and Typing respectively. Difficulty levels of each may be varied by setting Beginner or Advanced mode; increasing the number of questions in a game; and changing the time limit where appropriate.

'Words' flashes a word on the screen for a predefined time period, when the player must memorise it, and then type it in after it disappears. Points are awarded for accuracy, and bonus points may be earned for solving the anagrams occasionally presented along the way.

'Sentences' is a rerun of the exercises from the tutorial, displaying sentences on the screen which then have to be typed in. Mistakes are tracked and typing speed shown.

Finally, 'Typing' displays individual words on the screen and invites you to type them in. It also shows you a diagram of the keyboard indicating the key you need to press next. It won't let you press an incorrect key, so it's ideal for the raw beginner, especially young children. Typing speed is shown at the end of a game.

It's nice to see the results of your typing on paper, so Junior Typist can make your computer and printer emulate a simple electronic typewriter! This permits you to key in a line of text and have it printed as soon as you hit the Return key. The advantage of this is it allows users to actually print out what they type without the need to get involved with word processing programs - another thoughtful touch with young children in mind.

Overall, I think Junior Typist is excellent, and properly used really could give youngsters a good start in acquiring touch typing skills. Adult supervision will probably be necessary though, as the kids may succumb to the temptation of playing the games purely for high scores, disregarding everything they've learned about home keys and correct key fingering! But even if they do, they'll still be gaining in general experience and familiarity with the keyboard, which is a good thing in itself.

Title:	**JUNIOR TYPIST**
Publisher:	**School Software**
Price:	**£16.95**
Reviewer:	**John S Davison**

PD WORLD

Paul Rixon's

Businesses rely on it. Lives can depend on it. Computers are designed to store, retrieve, display, calculate, print, use and represent it in whatever format we require. Yes, information is a valuable resource! Developments in information technology have meant that a huge amount of information is now instantly available to whoever requires it, whenever and wherever it is needed. However, quality information is often only obtainable at a price. Communicating with on-line information systems is an expensive hobby, and even buying a few books or magazines each month can leave a noticeable void in your wallet. So what does the public domain have to offer?

STARTING OUT

Inevitably most of the information found in public domain libraries is aimed specifically at computer users. Several disks contain articles reproduced from US computing publications, such as 'Current Notes'. For example, **STARTING BLOCK** (so titled because many of the articles were originally printed in a regular column of the same name) is a huge collection of text files to help you get the most out of your ST. A neat utility called Reader 2.2 is provided so you can flick backwards and forwards through the screens, quickly and easily. By pressing a couple of keys you can have the output directed to a printer. The range of topics covered is vast so whatever application you have for your computer, there is bound to be something of interest. The subjects are as diverse as 'XL/ST file transfers', 'What to do if your computer get a virus' and 'Computer Shopping'. There's a stack of information on hard disks plus articles about modems, spreadsheets, word processors, languages ... the list goes on and on!

FOR THE PROS

To meet the requirements of serious programmers, Current Notes have gathered together a serious of articles posted by Antic onto Compuserve dealing with the internal secrets of the ST's GEM interface. **PROFESSIONAL GEM 1 and 2** are packed full of text and C source code examples written by a professional programmer who obviously knows what he's talking about. The two disks form a complete reference collection that will teach you everything about GEM from creating windows, building resource files and dealing with VDI graphics to insider's 'hints and hacks', user interfaces and coping with GemDos. The same information in printed form would cost you a great deal of money, so these disks are a genuine bargain!

```
MEMORY MANAGEMENT. The ST's operating system is installed in ROM, but it
also needs some RAM just to keep track of what's happening: I/O buffers,
display memory, and so on.

The operating system also has all the tables and functions needed to
manage the system's RAM; when a program is run, TOS figures out how much
memory is required to get the application loaded, reserves the memory,
loads the program, and transfers control to it.

If the application needs more memory, it simply asks the operating system
for it. TOS locates the requested amount of RAM, reserves it, and tells
the application where it is. If the needed memory is not available, the
requesting program gets an error message. This is where bad things can
happen to you--it depends on how thorough the programmer was in detecting
and handling such errors.

An application can release memory it doesn't need any longer by calling
on another TOS service routine. When the application is finished, TOS
releases system resources used by the application. Thus, if you look at
"free RAM" before and after running an application, you should see the
same number.
STARTING BLOCK - 1990      PAGE: 66/86      (Help) on line
```

Budgie UK have released a quick reference guide for ST programmers. The **ST-68K REFERENCE V3.0** contains over 250Kb of info on all areas of ST programming. Bios, Xbios, GemDos, AES, VDI and Line-A routines are all described - if you haven't a clue what these mean then grab a copy of the guide and find out! Other aspects of the ST's internals, such as the 68000 microprocessor and the Yamaha sound chip, are also discussed. A fairly basic - though not Basic(sic) - program is provided to allow rapid interrogation of the data. By double clicking on major subject headings you can locate the information you need without having to wade through pages of unrelated text. If you are at all interested in ST programming, this is a disk you do not want to be without!

ARE YOU NUTS?

Anyway, that's quite enough of the serious stuff! A couple of disks worth checking out if your sense of humour is up to the challenge, are **NUTWORKS 1** and its companion **NUTWORKS 2** (nice and easy to remember!). These disks contain a weird collection of on-line magazines which apparently originate from a bulletin board in the United States. The text files are a mixture of jokes, stories, strange anecdotes, poems, alternative lyrics and probably just about anything else that was submitted to the editors! You can ponder over the philosophical jottings (quote: 'time exists so that everything doesn't happen at once') and chuckle at the 'real life' humour (quote from genuine insurance claim: 'The guy was all over the road, I had to swerve several times before I hit him!'). Some of the humour is definitely 'alternative' but you are sure to have a laugh somewhere along the line.

A POLICE BOX?

If you needed to consult a detailed listing of Dr. Who episodes, where's the first place you would look? If it isn't the public domain you'd be missing out on an amazing array of useless information! **THE COMPLETE DR. WHO AND OTHERS** features an incredible amount of data about the series - scripts, authors, titles and other facts, not to mention a knitting pattern for Tom Baker's (the only REAL Dr. Who?) scarf! Elsewhere on this disk you'll find another batch of computer-inspired humour, a story about a fictitious land and a number of unusual pictures constructed using ASCII characters - obviously from the wonderful world of College mainframes!

Computer games can be frustrating at the best of times, especially so when you haven't got a clue what to do next! Fortunately the public domain can come to the rescue. If you're an adventure addict who doesn't haven't the time or inclina-

tion to work them all out, you'll appreciate the wealth of information contained in **ADVENTURE SOLUTIONS 1 and 2** (isn't it strange how all the info disks seem to come in pairs!). The files on these two disks reveal the secrets of over fifty popular adventures and they can be used to provide hints as needed or to obtain the entire solutions. If you are stuck on Dungeon Master, **DUNGEON MASTER HELP** will give you the breakthrough you need. This one presents detailed maps of all fourteen Dungeon Master levels as a continuous slide show. There are also charts of the spells and many other tips to guide you through the trickiest parts of this ST classic.

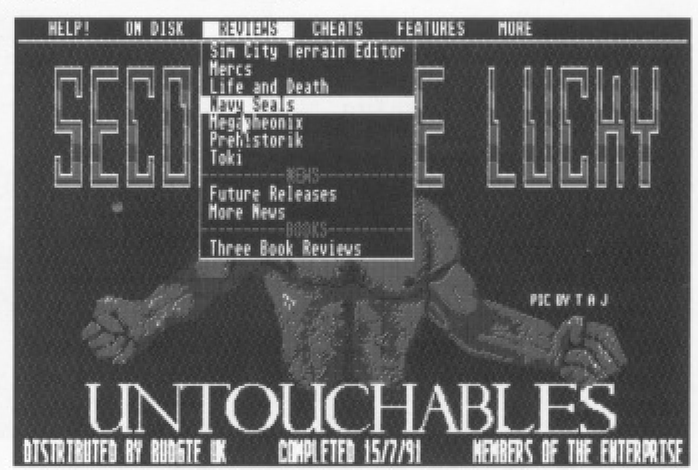
DUNGEON MASTER HELP disk with maps and text hints

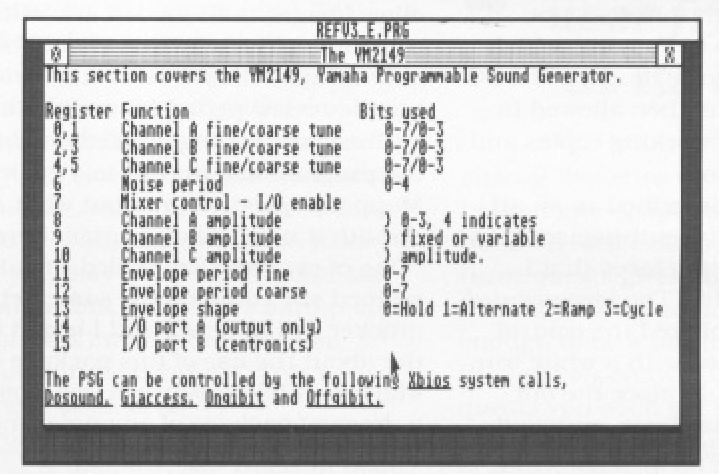
Previous page - STARTING BLOCK

PAPERLESS MAGAZINES

Disk magazines are always a useful source of information, and they are usually entertaining too. One of the most popular mags - ST News - vanished some time ago and everyone thought it was gone for good but now it seems to be back! **ST NEWS 6.2**, dated August 1991, was recently added to the library. As always ST News is packed with dozens of articles, facts, hints and reviews. In particular there are solutions to Leisure Suit Larry II and Wonderland, plus reviews of Gods, Lemmings, Llamatron, Superbase Pro and AT Speed. There are also some bonus files on the disk including the quick-boot utility Pinhead, an improved version of the compression program Pack-Ice and a PD offering from Gribnif (publishers of Neodesk) to replace and enhance those normally boring GEM dialog boxes!

The Lost Boys, meanwhile, continue to issue their 'Maggie' disks - believe it or not, they've already made it up to issue 7.0! There's not a lot I can say about Maggie that hasn't been said before - once you're familiar with the format, you'll know precisely what to expect! As well as plenty of excellent graphics and music (as per usual) there are some very worthwhile extras on **MAGGIE 7.0**, such as a demo version of the 'Professional Virus Killer' which can recognise almost five hundred bootsectors. Another program claims to modify certain demos so they'll run on the STE. I wonder if it works? Not to be out-done, 'The Untouchables' have been busy producing disk mags of their own and their second release - **THE UNTOUCHABLES DISK MAG 2** - is definitely worth investigating. There is a LOT of help here on ST games, a number of software reviews and some articles for programmers. Be warned that if you intend to read everything in these mags you are going to be up for a LONG time!





REFV3_E.PRG

The YM2149

This section covers the YM2149, Yamaha Programmable Sound Generator.

Register	Function	Bits used
0,1	Channel A fine/coarse tune	0-7/0-3
2,3	Channel B fine/coarse tune	0-7/0-3
4,5	Channel C fine/coarse tune	0-7/0-3
6	Noise period	0-4
7	Mixer control - I/O enable	
8	Channel A amplitude	) 0-3, 4 indicates
9	Channel B amplitude	) fixed or variable
10	Channel C amplitude	) amplitude.
11	Envelope period fine	0-7
12	Envelope period coarse	0-7
13	Envelope shape	0=Hold 1=Alternate 2=Ramp 3=Cycle
14	I/O port A (output only)	
15	I/O port B (centronics)	

The PSG can be controlled by the following Xbios system calls, Dosound, Giaccess, Ongibit and Offgibit.

Two from Budgie

Above - THE UNTOUCHABLES DISK MAG

Left - ST-68K REFERENCE GUIDE

THE CATALOG

Since we're on the subject of info, a brief reminder that if you want to view the exact contents of all the latest additions to the Page 6 library (and the many other disks too), you can do one of two things: You can buy them all, or alternatively you can send for a copy of the Page 6 Catalog Disk! As well as all the necessary data this includes a utility that will enable you to to search for specific information using wild cards, so the details you require are instantly at your fingertips. If you return your Catalog Disk when buying other software, you can also have an update for free!

That's it for another issue. If you're an artistic type (and also if you're not!) tune in to PD World in a couple of months, when the topic for discussion will be computer graphics. I hope you have a fun Christmas - see you next year!

HOW TO GET THEM

All of the disks featured in PD World are available from the PAGE 6 ST library. Each has a unique reference code which you should use when ordering or making enquiries. Please contact PAGE 6 if you don't have a copy of their Accessory Shop leaflets and check the system requirements for each disk. THE PAGE 6 CATALOG DISK containing a full list of disk names and contents is available from the library, priced at £1. The disks referred to in this article are:

ST77 PROFESSIONAL GEM 1
ST78 PROFESSIONAL GEM 2
ST116 NUTWORKS 1
ST117 NUTWORKS 2
ST136 DUNGEON MASTER HELP
ST148 ADVENTURE SOLUTIONS 1
ST222 ADVENTURE SOLUTIONS 2
ST320 THE COMPLETE DR. WHO AND OTHERS
ST480 STARTING BLOK
ST548 ST NEWS 6.2
ST564 THE UNTOUCHABLES DISK MAG 2
ST-68K REFERENCE GUIDE V3.0
MAGGIE 7.0

Prices for standard disks are £2.95 each or £2.50 each for ten or more
Write to PAGE 6, P.O. Box 54, Stafford, ST16 1DR
Telephone 0785 213928 or FAX 0785 54355 with credit card orders

CRIMEWATCH?

MUGSHOT

This is a strange piece of software. My initial impression was that it looked like a great deal of fun, indeed the manual says "Welcome to Mug Shot! More fun than a barrel of rhesus-pieces!". Unfortunately, this sort of overly clever second-hand car salesman attitude prevailsthroughout the manual. Undaunted I inserted and registered the disk, which means an Install.prg has to be run first. I was requested to type my name in so that the disk could save it and display this as my copy. A novel way to deter pirates, although this does not affect any backing up or copying, which is good and seems to owe much to the PC world of licences. I was then allowed to create my back up or working copies and thence try the program.

Mug Shot could be described as an art program, and my initial enthusiasm grew at the prospect of editing faces that I could print on a printer. The idea seemed good and once I deciphered the control system I was presented with a white window on to which I could place the outlines of eyes, chins, hairlines, ears and wrinkles by clicking with the mouse. It was in fact just like the Mug shot books so beloved of American police shows.

The software comes with two sets of outlines 'Famous' and 'Tunes'. It seemed that 'Famous' uses outlines from various real personalities and 'Tunes' was nothing musical at all but a cute way of spelling toons or cartoon like outlines. The package comes with its own art editor, a fairly basic line drawing and filling package which will allow the user to add to existing pictures or draw entirely new ones. The outcome can be saved in several ways with various extenders, .MGS for internal program filing, .MUG which allows for positional cross screen mode saving, or .IMG format and .PI2 or PI3 for Degas compatibility. These latter options allow images to be loaded into other programs. Just why this should be desirable escaped me for some time and during the review period I found my initial enthusiasm waning. Indeed on showing the program and output to a cynical Mrs. Mopp the question "Yes but what do you do with it now" was left unanswered.

One of my more art-skilled friends explained she could do the same better and quicker with a pencil and I began to wonder about the use of this package beyond idle fun. It fell in between two stools - not a drawing package of any note since the tools are far more editorial than creative and not really diverse enough to sustain long term interest as a 'fun' program.

I had at this stage just decided the software was for consigning to the miscellaneous oddities bin when, owing to a play by mail commitment, I had to produce a small document showing the faces of a couple of a group of notorious characters. I thought the only quick way out of this was to DTP a sheet in Timeworks via the AT emulator (yes I am aware that there are ST versions but this is an old PCversion I picked up cheap and second hand). I had no art tools for this sort of facial clip art though, so off went the emulator, in went Mugshot and within five minutes I had created and saved two IMG files that did indeed port into Timeworks. The two pictures were absorbed with no problem at all. I then discovered that the software could create other small pictures and thus I had found a simple clip art creator to personalise documents et al.

This revelation sent me scurrying away to try the other modes and I made the discovery that, despite my total lack of artistic skill, it was possible to use the polygon line and spray options to produce acceptable simple shapes. I was disappointed to find that the editor would not allow me to load IMG files or that MUG SHOT itself would not allow the re-introduction of IMG files but, despite this, I found Mugshot to be quite a useful piece of cross machinery art software.

In conclusion I have to say that, unless there is a specific purpose for this package in the mind of the purchaser, then thought will be needed before purchase but it does offer a cheapish way into a drawing package and it is fun, at least for a while.

● ***VERDICT** - Really quite fun for a short period although its longevity will be dependent on the use it can be put to, good value drawing set though.*

This software is available in th UK from Gralin International



Title:	**MUGSHOT**
Publisher:	**Wiz Works**
Price:	**£19.99p**
Reviewer:	**Damon Howarth**







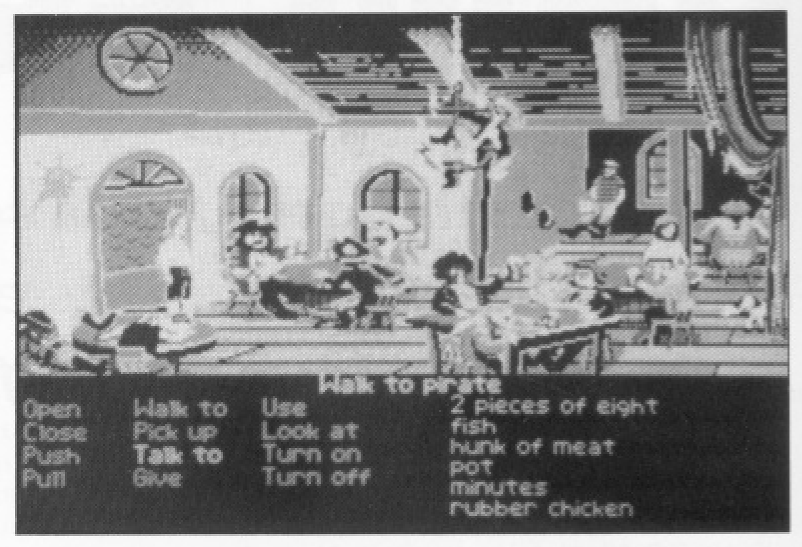
THE SECRET OF MONKEY ISLAND

GREAT! Go out and buy it immediately! (As long as you have a megabyte of memory and a double-sided diskette drive!)

This is what graphics adventures should always have been like - great graphics, superb animation, easy to use interfaces, puzzles and humour galore, romance, adventure, horror, everything!

As Guybrush Threepwood (yes, I know the name stinks - but it is the only bad thing about the game!) you fall madly in love with the beautiful governor of Melee Island while trying to become a pirate. Sadly your love is kidnapped by a ghostly pirate and you must find a way to reach the mysterious Monkey Island in order to rescue her from her supernatural suitor.

The mouse interface is excellent. A verb list on the lower left allows you to interact with items in the picture or with your scrolling inventory list in the lower right. The verb list is a little limited causing occasional frustration - but USE tends to cover most of the missing verbs so it works quite well really. This is supplemented by the fact that the system remembers the last verb you used (on the left button) and offers the most likely verb you might wish to use with an object (on the right button) so that many commands can be issued just with one point and click. Alternatively you can use the first letter of the verb on the keyboard then click on the target object with the mouse. I wish other games put as much thought into their ergonomics as this!



Another delight is the fact that it is practically impossible to die! At one point you may think you have died as you fall off a crumbling cliff top and a Sierra-style Restart/Restore box appears on the screen - but this fades after a few seconds as you soar back onto the screen, apparently saved from death by an amazing stroke of luck and a strategically placed rubber tree! You may still need to restart occasionally if you misuse a crucial item, but it is a much rarer requirement than in most games - you may not find the solutions immediately, but you will be hard pushed to get yourself into a situation from which you cannot continue. This is user-friendliness at its best.

Once you have located certain places on the overview map you can travel to them immediately by a simple point and click, so you don't need many maps or notes. You don't need to remember things to say to people as each time you start a conversation you are offered a list of suitable phrases to use. I only made about two pages of notes for the whole game.

Many of the puzzles are fairly straightforward and typical of this sort of animated adventure, but the graphics and text are packed full of humour and it is great fun to play. There are also a few very clever puzzles (and a couple of slightly obscure ones!) to keep you on your toes. The method they have implemented for sword-fighting, for example, is brilliant, but I won't spoil your fun by saying any more.

As with any graphics adventure you will have pauses of ten to fifteen seconds for diskette loads, but they cram a lot into each load so it is worth the wait. (Even better if you have a hard disk!) Although there are four diskettes you don't have to change diskettes too often as the game is broken into chapters. Chapter One takes place on Melee Island as you follow up three quests given to you by the pirate leaders in order to prove yourself good enough to be a pirate yourself. Even though you eventually succeed in your quests you soon get side-tracked into trying to buy a ship and recruit a crew so that you can sail off to Monkey Island to find your true love.

"user-friendliness at its best"

Chapter Two is quite short - the voyage to Monkey Island, complicated by the fact that you haven't the slightest idea where it is! Certain hints soon lead you to believe that there must be some magic involved somewhere!

Chapter Three finally takes place on Monkey Island as you search for its secrets, aided and abetted by the local cannibals, a marooned sailor, and, of course, the odd monkey!

Chapter Four is, hopefully, a happy ending - as long as you can work out how to defeat the ghostly pirate despite the fact that you have managed to lose the only weapon which will work against him!

- ***SIGHT & SOUND*** - *Lots of happy tunes, plus a few sound effects*
- ***GAMEPLAY*** - *Fun and easy to play, excellently designed*
- ***VERDICT*** - *Thoroughly recommended!*

Title:	**THE SECRET OF MONKEY ISLAND**
Publisher:	**Lucasfilms**
Price:	**£25.99**
Reviewer:	**John Sweeney**

SAMPLE THIS!

In the fourth part of this series John S Davison turns his eye, and keyboard, to the more professional end of the home market

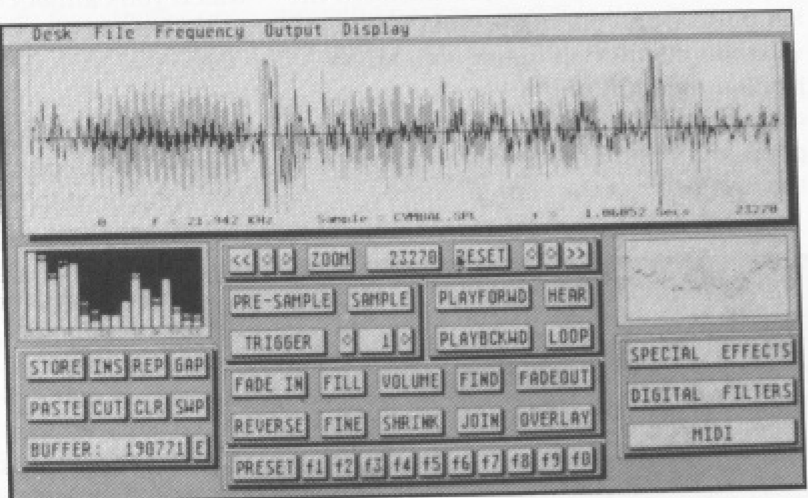
As promised in the last issue we'll be looking mainly at Microdeal's top-of-the-range Replay Professional sampling package this time. I also wanted to cover their exciting new Stereo Replay package, but the review copy arrived too late for inclusion here. However, from the quick look I've had I'd say it's a real winner, and at £89.95 well worth the £10 extra it costs over the old Replay-8 package price. Full details next time - meanwhile back to Replay Professional.

At £129.95 Replay Professional costs a lot more than other samplers we've examined, but then it does offer more. It contains the sampling cartridge; three disks of software including the Replay Professional sample editing program; the Drumbeat Professional drum machine program; and the MIDIPlay Professional keyboard emulator. Three user manuals are supplied, which although rather shoddily presented seem adequate for their purpose. All the software runs in medium or high resolution on 520ST/STE's and up, but larger memory allows you to better exploit its facilities - via higher sampling rates, longer samples, or more samples in memory at once.

The cartridge looks externally identical to the Replay-8 cartridge discussed last time. It still uses 8-bit resolution for recording, but now replays samples using 12-bit resolution, which does seem to improve the subjective sound quality a little. It has phono sockets for sample signal input and direct sample playback via a separate amplifier (e.g. your hi-fi).

The sample editor program is virtually identical to that in Replay-8. The only difference I could find was in the area of digital filtering, which now has "fast" and "slow" filtering algorithms and a variable bandwidth facility. Other features are as described last time, but I'll briefly summarise them anyway.

Firstly, it records and replays samples at rates from 5.5kHz to 48kHz. You can then selectively cut, paste, copy, repeat, or delete parts of a sample; or reverse it, insert other samples into it, and superimpose other samples over it. You can also fade samples in/out, add special effects such as reverb, echo, tremolo, or flange; or digitally filter them in many different ways. Real-time oscilloscope and spectrum analyser displays help you make good quality recordings, and 3D Fast Fourier Transform and filter response displays assist with any digital filtering experiments you want to perform. Facilities are also provided for "looping" samples - repeated replay of a chosen internal section of the sample to give a long sustained effect from a short sample. Up to ten samples can be assigned to the ST's function keys, allowing you to quickly switch from one to another. Samples can be played monophonically (i.e. single voice only) from an attached MIDI keyboard, but for serious MIDI use you need the polyphonic MIDIPlay program, which I'll describe shortly.



As expected, Replay-8's Drumbeat program has also been been upgraded to "Professional" status. Again, it's not immediately obvious what's changed, as it's very similar to the Replay-8 version. It can load a drum kit of up to 15 different samples; define up to 50 different rhythm patterns each of up to 32 steps which play this kit; then sequence these patterns together into a song of up to 100 pattern entries. Up to 10 songs can be held in memory at once. It synchronises with incoming MIDI clock signals or sends out MIDI clock signals to drive other MIDI equipment, and can also transmit MIDI note/channel/velocity information and hence drive other external MIDI sound sources. The big difference is that it can now play four samples simultaneously instead of two! And most importantly, it's capable of impressive sound quality, as shown by the demo sequence provided. It works ONLY via an external amplifier - no TV/monitor output option is provided.

MIDIPLAY PROFESSIONAL

The major software extra you get with this package is the MIDIPlay Professional program. Basically, it turns your ST into a polyphonic sample player module, which can be driven either by an attached MIDI keyboard or from an exter-

nal MIDI sequencer. It can load up to 128 samples (memory permitting!), allowing a different sample to be assigned to each MIDI note! Alternatively (and more likely!) fewer samples may be loaded and each one assigned to any single key or range of keys, allowing the triggering of individual samples or the ability to play them at different pitches.

Like Drumbeat Professional MIDIPlay has four "voices" - it's four note polyphonic/multitimbral - a big improvement on the simple MIDI facilities in the editor program. Again, playback is ONLY through an external amplifier.

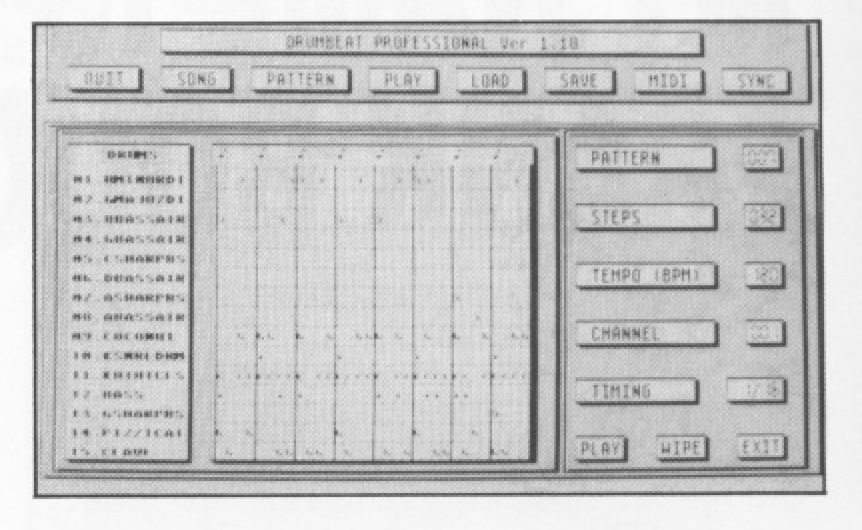
The voices can be tweaked in various ways before use. For instance you can adjust the volume of each so they're correctly balanced against each other. Voices may also be individually tuned, octaves changed, and the normal semitone intervals between notes in a scale modified for special purposes. As in the editor, sample looping points can be set, allowing a sampled sound to continuously play for as long as you depress its triggering key on the MIDI keyboard.

On the MIDI front it's possible to specify the MIDI channel(s) to which the program will respond; to switch in a soft MIDI THRU function (allowing interconnection with other MIDI sound sources in your setup); and to set the sensitivity of the voices to incoming MIDI pitch bend messages.

I'm using MIDIPlay with my Yamaha YS-200 and PSS-680 MIDI keyboards and it works extremely well, producing some nice sounds - assuming you've made some good quality samples to start with! My only real criticism is that four voices still isn't quite enough for solo live playing - eight notes being a more realistic minimum. Even so, it's infinitely better than the single voice capability of Replay-8.

I've also successfully driven MIDIPlay from the onboard sequencers in the YS-200 and PSS-680, just as you would any standalone sampler module. And how about this - I even tried connecting my old 520STM (running the Steinberg Twelve sequencer) direct to the STE (running MIDIPlay) via MIDI, and witnessed the astonishing sight and sound of the STM playing musical sequences using sounds generated by the STE. Just think of the new possibilities this opens up!

Despite its name and undoubted good performance, I still wouldn't class Replay Professional as a truly "professional" sampler, as like all the previous products we've examined its hardware still uses 8-bit resolution. Today's professional recording musicians demand instruments capable of matching CD quality, and it takes a minimum of 16 bits to achieve acceptable levels of distortion and signal-to-noise ratio, as discussed in earlier articles, 8-bit technology just can't hack it.



Replay Professional is relatively straightforward to use after a little practice, and as with all these sampler packages I found it great fun too. At first I wondered if it really offered enough over Replay-8 to warrant spending the extra £50, but now I'm totally sold on it! If you want a high quality sampler with bags of flexibility to use with other MIDI equipment, this is the one to go for. You'll need plenty of memory to fully exploit it though.

SAMPLER FODDER

One topic I haven't covered yet is WHAT to sample and WHERE to find suitable material! Well, you can sample and use literally any audible sound. The trick is then to find a musically valid use for it! In their search for "something different" professionals sample the most unlikely sounds, especially for rhythm tracks. Recently I heard of someone using the the thud of a snowball smashing into a wall as a "drum" sound in a rhythm mix! So - if it sounds OK, it's valid!

Serious samplists (if that's the right word) sample all their sounds "live" - if they want a saxophone sound they get someone to play one while they sample each note. Others just lift sounds from existing commercial recordings, then disguise them by editing, filtering, and adding special effects. Strictly speaking though, this is illegal as it virtually always infringes another musician's copyright.

When looking for samples you can save yourself a lot of time and hassle by using a "sampler CD". These are CD's specially recorded for use with samplers, each one containing hundreds of different sound snippets - single notes, chords, riffs, drumbeats, etc. performed on different instruments. Each sound is cleanly separated from the others to facilitate sampling, and sound quality is usually top class. They tend to be expensive though, usually in the £40-£50 range. See the adverts in the monthly music technology magazines for further details.

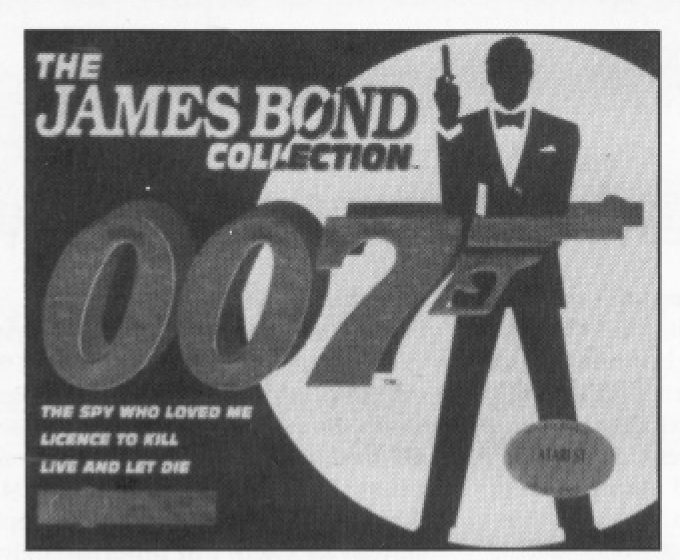
Other sources include commercial sample libraries, which sell ready-to-use samples in many different sampler formats. So far I've only found one selling ST based samples, this being Premier Music Services (phone 0703-260485). They sell a wide range of ST sample disks at just £7 each, but unfortunately not for use with 8-bit samplers, only with AVR's Pro-Series 12-bit and 16-bit samplers. These are even more upmarket versions of Replay Professional, and at £245 and £345 respectively are probably beyond the reach of the average user, which is why I'm saying no more about them here!

Public domain software libraries are another possible source. Some sell raw 8-bit Replay samples, but often the samples are intended for use with PD "soundtracker" programs and are packaged into combined music/sample "modules". To extract the raw samples you'll probably need the original soundtracker program which created the module, e.g. the NoiseTracker program we looked at earlier in this series. The Page 6 PD library includes several soundtracker disks, and others containing STOS Maestro samples. The latter have to be converted before use with Replay, but both the Replay-8 and Replay Professional packages include a free PD program to handle this. In fact it converts either way between the various Replay, STOS Maestro, and Master Sound formats.

It's also sometimes possible to extract and use samples included in PD demo's and games, as they're often stored in separate files that can be loaded straight into a sample editor. You can also do this with some commercial games, but again you'll probably be infringing someone's copyright.

That's all for now. Join me again next issue for the concluding article in the series, when I'll be looking at that elusive Stereo Replay package and be giving some hints and tips for producing good quality samples.

MY NAME IS BOUGH, FRANK BOUGH!



Once more Domark are setting off on the collections trail. It is a sure sign that Christmas is in the air when collections of past favourites are being wafted round at relatively discount prices. The two compendiums under scrutiny here are very different animals and probably between them will have some appeal to all the ST using populace.

The ***JAMES BOND COLLECTION*** is probably the weakest of the pair and thus I will run through this trio of offerings first. The three games included are The Spy who loved Me, Live and Let Die and Licence to Kill. The first notable thing about this compilation is that it fits easily onto the one 720K disk, which is unfortunate for those few single sided disk drive owners but said breed appears to be becoming endangered and possibly extinct.

The games show the up and downs of Domark's licencing life. **Live and Let Die** is a very disappointing speed boat race game. There is a sufficiency of colour and the joystick control is good but there is little variety. The objective is to simply aim at an area of the world map and chase your vertically scrolling scenery to the end of your fuel. The scenery is bland and blue and this is the compilation's compulsory makeweight.

The Spy Who Loved me offers a little more challenge and variety. Still very much a vertical scrolling chase this time there is the option to obtain disks that will allow additions to the car and the chance to dodge hazards such as pedestrians, thereby maintaining points. The sound and colour here is better and the Bond theme is somewhat more recognisable. There is also a wider variety of sub games to play that follow the film plot in a recognisable way and offer a great deal of challenge. It appears this is Domark's Bond leader since it appears on both this Bond collection and on their Super Heroes compilation.

Licence to Kill offers the most modern interfacing and the best music and sampled effects. It builds on the linked sub game model of Spy and allows the player to attempt to recreate the feats seen in the film. Sadly it does not allow any of the Bond Girls to be accessed at any time but it does allow for all the leaping out of helicopters waterskiing on your bare feet and general demolition for which Fleming's hero is justly famous. This game has good effects and smooth controls. Fortunately all the actions are performed using the same joystick or key combinations thereby allowing for instinctive reactions.

On the whole this particular collection, though good, may not be too popular. Spy is available on a more attractive set and if Licence to Kill excites your desires it is also available on Heroes, the summer Domark collection. Live and Let Die doesn't seem worth the money at all.

The sports compilation ***GRANDSTAND*** does offer value for money with four games of acceptable and better standards. The worst of the quartet is **Gazza's Super Soccer**. This is a slow league based game that Domark have been so embarrassed by the forgot to include instructions in the book. Fortunately the slow gameplay and peculiar actions of the teams are easy to work out and the controls are similar to better offerings. The game does not even allow teams away strips when both play in the same colours!

Continental Circus has been with us for some time and offers a no nonsense racing game. While in no way a simulator it offers a progressive challenge with an arcade feel to it. The backgrounds are strong and there is some addictive feeling to it, although the game still seems unsophisticated in comparison to latter day offerings.

The two best games are **World Class Leaderboard** and **Pro Tennis Tour**. Or, to be more honest, Leaderboard and Pro Tennis Tour because the upgraded 'design your golf course' version was not implemented for the ST and thus you have only the one course to play. Leaderboard is probably one of the ST's better golf games. Although somewhat geriatric and available at budget price, it offers all the facilities of the state of the art games and is well worth playing. Control is by mouse and little else needs to be said about this classic. Pro Tennis is a pleasantly challenging game that I enjoyed Good sized sprites and sensibly sampled effects allow for a fast challenging game. It is pleasant to watch your ranking increase as you lose your way through a tennis season! Plenty of practice needed here for an absorbing game.

On the whole the Grandstand collection is a good buy so long as you do not own either the golf or tennis parts, Gazza's Soccer is more than disappointing but the racing will entertain participants after the Christmas turkey has been guzzled. This would be a better present than Bond although I find the £30 rather steep for such antique software.

- ***GAMEPLAY*** - *Generally acceptable in both sets, although the makeweights of each are eminently missable*
- ***SOUND & GRAPHICS*** - *Tennis and Licence both show good effects in sound with reasonable graphics, the others are acceptable with dated sound and vision*
- ***VERDICT*** - *Each set has at least one strong component thus saving them from the slur of rip-off*

GRANDSTAND and THE JAMES BOND COLLECTION
Publisher DOMARK
Price: James Bond £24.99/ Grandstand £29.99
Reviewer: Damon Howarth

HERO QUEST

and

RETURN OF THE WITCH LORD

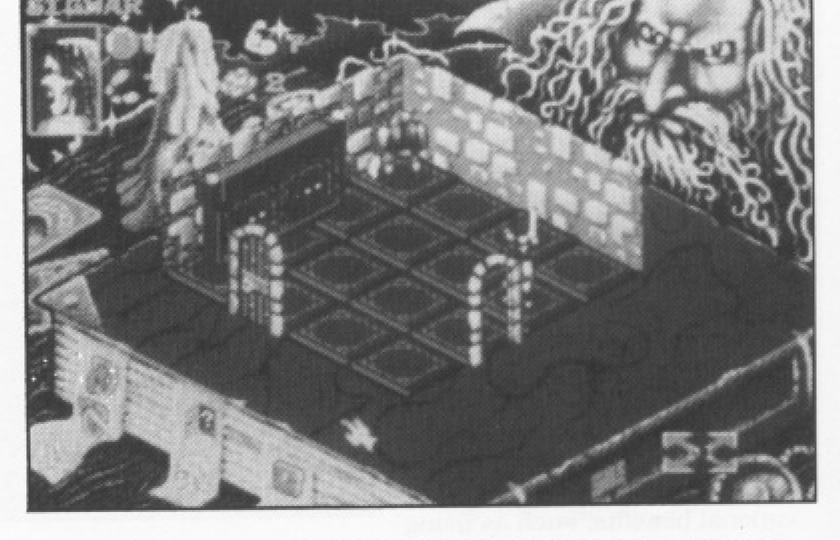
Hero Quest is an icon-driven, three-dimensional graphics adventure game of monsters and magic based on the popular board game of the same name (and not to be confused with Sierra's "Hero's Quest"!). You can have up to four people playing at once who can be either Barbarian, Dwarf, Elf, or Wizard. The characters vary in their powers, number of body points (how many hits before you die) and number of mind points (chance of a spell affecting you).

There are fourteen quests that you can take up, each with a different scenario. Each dungeon contains random treasures, monsters and occasionally magical equipment such as deadly swords, wands and talismans. If you find any potions you should use them before you leave because you can't take them from one quest to another.

The dungeon floor is marked out in squares; on each person's turn the computer throws movement dice for you and then you use the mouse to move your character, check the map, manipulate your belongings, and perform ONE action each turn: fight, search for traps/secret doors, or search for treasure.

Make sure you search every location for treasure: the more gold you get the more you can buy at the shop. But beware of searching when you have only one body point because you can fall into traps or be attacked by wandering monsters. Search for traps first! Also be careful with your spells as the spell will be wasted if your character can't see the target.

There are some nice touches to the game such as a spinning gold coin for a dice roll. The background is well made and looks as you would expect a dungeon to be.



It would be nice if the players could interact with each other more, such as trading, fighting etc., because if you don't want to work together then the most you can do is try and block doorways, unless you're the wizard or elf in which case you can cast spells on the other characters but they can't harm you back.

Beware of "freshing" (restoring all your body and mind points) in between quests because although it heals you, you will lose all your equipment and money!

The computer game is roughly the same as the board game (except for the price!), but you can only play the board game if you have quite a few people, whereas you can play the computer game by yourself and control as many characters as you want easily, as the computer keeps track of everything. Hero Quest also has a map function which can come in handy while exploring or going back somewhere, looking for monsters, and of course trying to find the way out!



Return of the Witch Lord



is an extension set for Hero Quest and works in exactly the same way, but has new, nastier monsters, different scenery and is overall much harder. You need to play Hero Quest first to collect special items that you need to use to defeat the Witch Lord, then load your saved character into Return of the Witch Lord.

My main criticism about this extension set is that the shop doesn't sell any more weapons than before. The throwing of spears and hand-axes doesn't seem to work so once you've got one of everything, you can't do anything with your surplus money. Also if someone finds something that they can't use - for instance if the dwarf finds the bracers which only the wizard can use - then he can't give them to the wizard and he can't sell them to the shop for the wizard to buy. It would also be nice if you could buy potions, especially healing potions, at the shop.

HINTS

To make a powerful character you can choose one person to play with and have the other three as bodyguards. Use the bodyguards to do all the fighting and searching for traps while your main character just grabs all the treasure! You can "fresh" all the bodyguards at the end of each level as they won't have anything to lose. Cast all left over healing spells at the end of the level.

The first thing you should save up for is a crossbow as it is the only ranged weapon and the monsters you are fighting can't hit you back if you stand in a different "room".

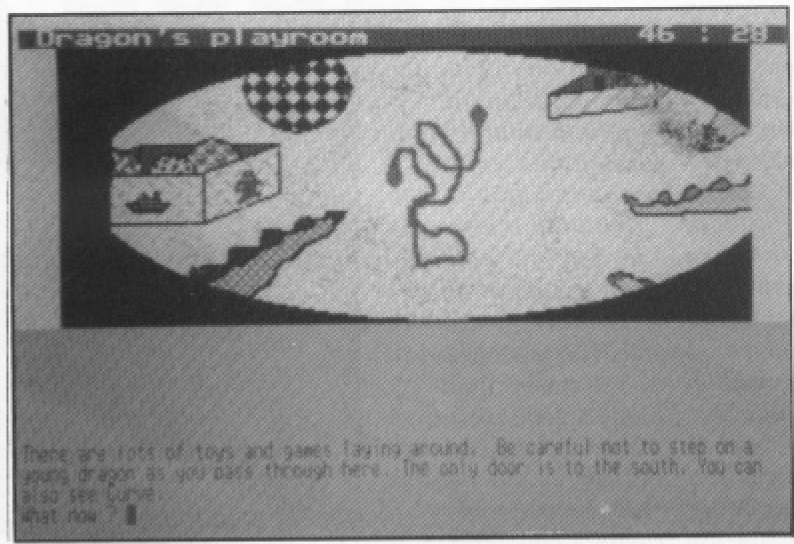
To get gold: enter a quest that has the exit in the room where you start, then search for treasure and leave. Come in again search and leave. This can get tedious but it allows you to get good weapons and armour!

- **SIGHT & SOUND** - *The graphics are quite good although there is not much animation. Fairly good sound effects for things such as walking and fighting; nice music track*
- **GAMEPLAY** - *Very like the board game - easy to play and highly addictive*
- **VERDICT** - *Good fun for both solo and group play*

Title:	HERO QUEST and RETURN OF THE WITCH LORD
Publisher:	**Gremlin**
Price:	**£25.99 & £14.99**
Reviewer:	**Alex Sweeney**

MATHS DRAGONS

Maths Dragons is a new educational package designed to help 6-13 year olds practice their arithmetic. This wide target audience is made possible by a simple but unusual method of tailoring the difficulty of the problems presented, namely by setting the maximum numeric value an answer can take. The program uses a completely different approach to that normally found in maths programs too - it's based on a graphical adventure game! This gives additional educational benefits, such as using the concepts of direction, mapping, use of simple logic, and even basic keyboard skills.



The game's scenario places you in the caves of the Maths Dragons. You were invited there to play with the young dragons, but they've been rather naughty. They've stolen all the pieces of the train set you took with you and scattered them around the caves. As you search the caves to retrieve them you encounter adult Maths Dragons, who have this nasty habit of setting you arithmetic problems whenever you meet! If you answer incorrectly they confiscate a piece of your train set and hide it again! You also meet baby dragons occasionally, and this usually spells trouble as they're fond of hindering your progress in various ways.

The game has 21 different locations, ready mapped in the instruction booklet in case you can't manage it yourself. It also lists the train set components you have to find. The program has a command vocabulary of about 100 words, but you can complete the adventure using just a few of them. There's also a Help facility which reveals a magic word for use if you get stuck, and you may also discover others during your quest.

Title:	**MATHS DRAGONS**
Publisher:	**Coombe Valley Software**
Price:	**£14.99**
Reviewer:	**John S Davison**

The playing screen is split in typical graphical adventure style, the top displaying the pictures and the bottom used for text messages and command input. The graphics are not very good, consisting mainly of line drawings filled in with the ST's predefined fill patterns. Many of the locations are visually very similar too. The graphics are completely static - no animation and no updating, not even to show the presence of pieces of train set. Information of this type is communicated via the text display. In fact the graphics add little to the game itself, but do provide additional interest for younger players.

The text display uses the ST's 80 column mode, so the characters are quite small. Some children would probably have difficulty reading it, particularly if using a TV display rather than a monitor. Also little allowance seems to have been made for the limited reading abilities of very young players, so they'd need help from a parent or older child to successfully play the game.

Use of sound is rather sparse - there are no sound effects, and the program uses only a single soundchip channel for music. This seems to play fairly randomly during a game, and stops as soon as you type something on the keyboard. Thankfully it's not overdone, so remains fairly inoffensive!

It's possible to play the game through fairly quickly, so there's no need for game save and load features. There's no facility for tracking a player's maths performance either, but the fact that a game has been completed indicates right answers were given at least some of the time! An end of game summary would have been nice though. All you get is the number of points scored and number of commands entered, but at least this can be used as a target to beat next time you play.

"FIRST ADVENTURE"?

The gameplay itself is fairly basic as far as adventure games go. Seasoned young adventurers would complete it in a few minutes (unless they're totally hopeless at maths!), but it's not aimed at such people. It does make a passable "first adventure" though, and could trigger an ongoing interest in the genre. Incidentally, each game played is different as the pieces of train set get scattered in different locations each time through. You're also at the program's mercy in terms of when it reveals the pieces to you. They're not cunningly hidden in obscure places - they just seem to appear in a location at the program's discretion, and this seems linked in some way to the difficulty level set at the start of a game.

I'll bet you're thinking I don't like this package. If so, you're quite wrong! True, it's not much of an adventure game and its presentation could be much improved, but the merit of the original idea comes shining through. The fact that you have to solve maths problems to progress doesn't seem out of place at all - they're just an integral part of the game! Even Pete, my ten year old son (who normally hates practising arithmetic) was reasonably impressed and enjoyed playing. That's praise indeed from someone who's had dozens of different educational programs inflicted on him over the years in support of Page 6 reviews! So, if you want a program with a different approach to maths practice, buy Maths Dragons. I'm sure your kids will enjoy it.

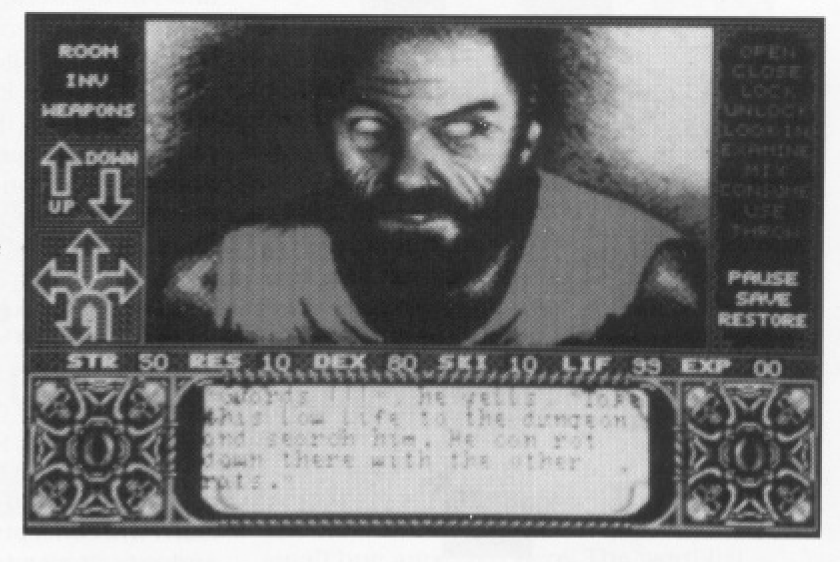


ELVIRA

In the October 1989 issue of New Atari User I reviewed the excellent 'Personal Nightmare'; at the end of that article I wrote: "Watch out for 'Elvira, Mistress of the Dark' later this year!". Well, it took a little longer than that to get hold of a review copy - but finally Elvira has arrived. Was it worth the wait? Yes, I think so - although it will not appeal to everyone! It is another brilliant graphics adventure with all input via the mouse, but there are numerous fights in an arcade style which may put off some people. Some encounters need to be resolved with ranged weapons - crossbow and spells - which are also often useful as a preliminary to hand-to-hand combat, but you need to be careful as you need some of your ranged weapons for specific purposes.

Most encounters are hand-to-hand fights where you have to click VERY quickly to attack or defend either to the right or the left. The fights start off quite slowly, but as the game progresses the enemy gets much tougher and faster. Apart from ensuring that you have the best weapons and armour you will need to practise hard and use SAVE/RESTORE quite often! Fortunately your character's skill increases as he wins his fights and you should have some pretty powerful offensive spells by the time you need to take out the real heavies.

Death comes frequently and very gorily - accompanied by very detailed pictures of your remains! This is all very good as it sets the tone of the game very well, but it does get a little tedious having to constantly restart the game and retrieve your last saved position. Generally the response times (5 to 10 seconds to load a set of rooms or an animation sequence) are very good considering the quality of the graphics - the constant switching between the five diskettes is rather more frustrating (I played it on a hard disk and thought it was great!).



For those who are into plots, Elvira needs your help to rid the eerie castle she has just inherited of the ghost of her evil Great-Great-Grandma Emelda and all her horrible friends. You need to find six gold keys to unlock a chest containing certain artefacts capable of destroying Emelda. You'll need a few spells along the way and Elvira will mix these for you providing you can find her spellbook, get rid of the cleaver-wielding cook from the kitchen and find the necessary spell components.

There are about fifty ingredients (ranging from maggots to deadly nightshade!) with which you can make over two dozen spells such as Manticore Flip (magic armour) and Cat & Dog Broth (highly destructive thunderflash!). I never did find all the components - it is a slight weakness of the game that you only need to use a few of the spells to finish the game.



The castle is enormous covering over 300 locations (plus another 150 in the moat!) although many of these are parts of the mazes which you will find in the garden and the crypts. The graphics are excellent and you must be careful to click all over the pictures carefully to see what you can discover. Once you find something which reacts to the mouse you can try picking it up or examining it. Once it is in your possession you may get offered a couple of other possibilities through the verb list down the right side of the screen. This is a little limited, mainly allowing you to manipulate locked doors, wield and use weapons, and cast spells. (It should be noted however that, despite what the manual says, Double-Click and EXAMINE are NOT the same and you will get crucial extra information by EXAMINING items.) Most other problems are solved by placing an item at the appropriate place on the screen rather than by USING it.

> ***"Death comes frequently and very gorily"***

There are some nice animation sequences - it is amazing how much of Elvira moves when she is talking to you or crawling up and down tunnels for you!

NASTY BUG: if you reach the moat via a rope then when you try to climb back up the game may crash - apparently this is a known bug and the game is not guaranteed to work on either STEs or STFMs (which seems to cover most machines!) - they are not planning to fix the bug - just don't use that route - there is another way down to the moat!

Title:	**ELVIRA, MISTRESS OF THE DARK**
Publisher:	**Accolade**
Price:	**£25.99**
Reviewer:	**John Sweeney**

- ***SIGHT & SOUND*** - *Great graphics and animation; sounds are mainly music and grunts during fights*
- ***GAMEPLAY*** - *Nice to have a slightly different approach to a graphics adventure - ergonomics not brilliant, but the game is good fun if you get into it*
- ***VERDICT*** - *If you accept the fights and the disk switching then Elvira is an excellent game, well worth the money*

RAINBOW

EDUCATIONAL GAMES

Rainbow Educational Software have launched two educational packages aimed at the under-5's age group, namely Shapes and Colours, and First Letters. They're the first of a planned wide-ranging series aimed at three different age groups - Rainbow's "available soon" list shows a further twelve products to come. Each is presented in high quality colourful packaging containing one double sided disk and a simple instruction sheet.

SHAPES AND COLOURS

This package is a collection of six programs designed to help young children learn the concepts of shape, size, colour, and sets. It also touches lightly on letters and numbers, a subject taken up again by later Rainbow offerings. Each game is totally mouse controlled using colourful graphical menus and icons, and visual prompting. The programs are unified by the use of a theme character, an idea pioneered in Database Software's superb Fun School educational programs. In this case it's Bobby the Clown, whose happy smiling face lends an air of friendliness and familiarity to each new topic presented. The individual programs are as follows:

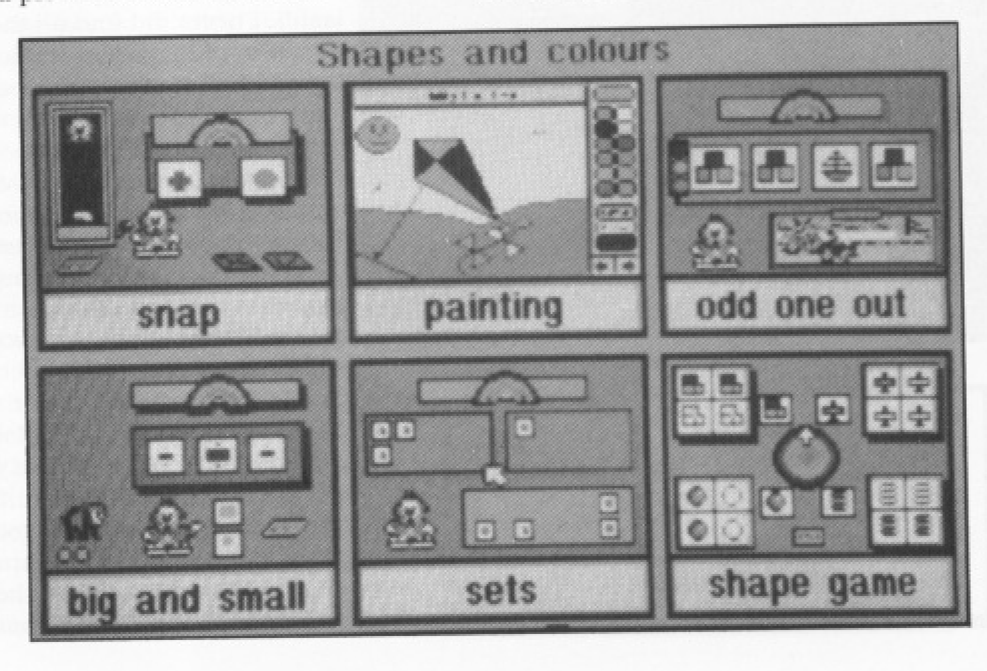
SNAP - displays a group of items and you have to indicate whether they match or not by clicking on a tick or cross. Level 1 uses simple geometric shapes, Level 2 uses familiar everyday objects, and Level 3 more complex objects. A correct answer earns a cheery "thumbs up" from Bobby, an incorrect one eliciting a gunshot sound. Five correct answers launches a custard pie into the clown's face!

PAINTING - a simple colouring program. Choose from any of twelve colours then use the mouse to paint any area of the displayed picture with it. There's a choice of six different pictures, and you can switch between them at will, even if they're only partly completed.

ODD ONE OUT - click on the "odd man out" from the displayed group of items to move a red car one step towards the race finishing line. Wrong answers earn a gunshot sound and the blue car moves forward instead. Make the red car win and you receive a musical and animated reward. If the blue one wins you hear a rude noise! At the highest level the program uses LOGICALLY connected items - all the items may be different shapes and colours, but three of them will have a common characteristic. For example, they could be different items of clothing, with the odd one out something completely different.

BIG AND SMALL - presents items of different sizes. Bobby points at an icon indicating whether you should find the largest or smallest of them. Clicking on the correct item causes a coin to drop into Bobby's piggy bank, and six coins buys him an ice cream. Level 1 uses simple shapes in two sizes. Level 2 moves on to simple objects in three sizes. Level 3 uses three different but logically connected items, e.g. animals, vehicles, etc.

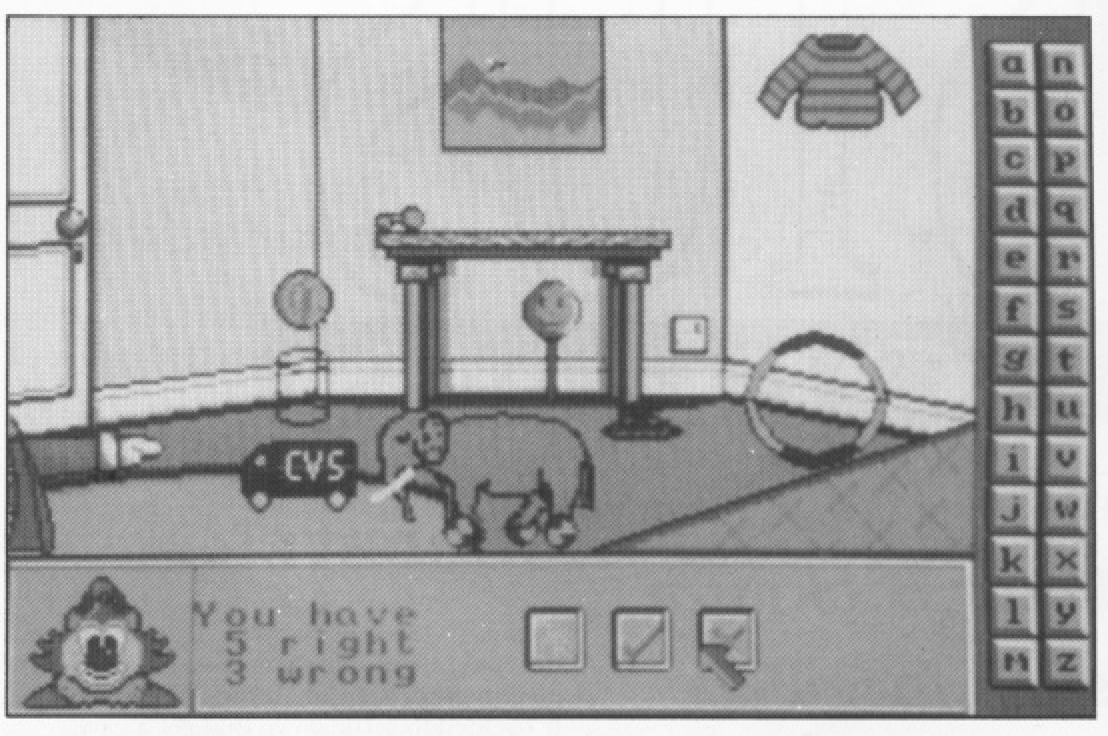
SETS - displays eight different items, of which two sets of four have common characteristics. You have to form the sets by moving each item to the appropriate area of the screen. Again there are three levels, with Levels 2 and 3 using logically connected items. Level 3 can get quite difficult, as all eight items may at first seem to have the same characteristic. For example they all could depict different foods, but closer inspection reveals they may be subdivided into "fruits" and



"other" foodstuffs. An incorrect solution earns that gunshot sound again and the chance to move the offending item to the other set. Correct solutions earn sections of an amusingly animated reward screen, which build up into a complicated mechanism rather like that in the old "Mousetrap" board game. Here, its eventual purpose is to tip a bucket of water over Bobby!

SHAPE GAME - more of a lighthearted bonus game than an educational program. Up to four players can choose a token from the six displayed. Then, each player has to collect four of his chosen tokens by spinning a wheel with a pointer on it. If the pointer comes to rest on his token, he wins another one. The first player with four tokens wins the game. There's no skill involved - it's a really a game of chance. This is the weakest of the six programs, but it would probably bring light relief at the end of a heavy session with the other five!

Overall, Shapes and Colours is a superb package, which in style and quality reminds me very much of the legendary Fun School series. Its graphics are well drawn and very colourful, and it exploits the ST's sound chip to just the right degree. It uses multichannel sound, but with restraint so the music and effects never become obtrusive. No need for a "music off" button in this package! The content is well thought out too, with a well judged degree of difficulty between the levels within each program. I also liked the way it gently introduces the concept of letters and numbers - they're occasionally used instead of pictorial items in some of the programs. Finally, it's extremely easy to use - a very important consideration for programs aimed at young children. It's the best educational package I've seen for some time - the kids will love it!



FIRST LETTERS

This program is designed to assist youngsters to learn the letters of the alphabet. Unlike some educational programs recently launched it uses lower case letters, which is what the children learn first at school. It uses Bobby the Clown as the theme character again, but this time Bobby has invited you to look around his new house, and to play a game in the process. There are twelve rooms, each with ten items in it. There aren't 120 different items though, as some appear in more than one room. If you watch carefully one of the items displayed will move in an appropriate way, for example a jigsaw fits itself together, or a ball bounces. You have to first identify what the item is then tell Bobby its initial letter, and this may be achieved in three different ways.

Firstly, you can click on the appropriate letter in a table on the right of the screen. Secondly, you can repeatedly press the ST's spacebar to sequentially step through the letters of the alphabet to the required one. Finally, you can press the appropriate letter key on the ST's keyboard, but this relies on the use of upper case letters on the keytops - not a good idea as it could be confusing to a young child.

Select the letter correctly and Bobby awards you a tick. Get five ticks and Bobby asks you if you want to see another room of the house. Complete five rooms and you earn a bonus reward screen - an amusing animated sequence involving Bobby. Music plays too, but I'm sorry to say it uses single channel sound only, which to my ears always sounds crude and inadequate.

A wrong answer earns you a cross and that gunshot sound again. The correct letter is then displayed at the bottom of the screen and the program forces you to select it before proceeding to the next item.

If you have problems finding and recognising the item, just press the ST's Help key. This displays a list of all the items in the room. It's in text form and unlikely to be of much help to young children though. Pressing it again will then tell you the answer, complete with its initial letter highlighted. The child may then use this to find a similar letter in the table and select it using his preferred method. When running on my STE a small bug appeared here. The word list didn't get cleared from the screen, so the next message displayed got mixed up with it and couldn't be read easily. The problem soon corrects itself though.

First Letters just isn't in the same class as Shapes and Colours. It tries hard, but isn't nearly as polished as its companion. This shows up in things like the single channel sound and that message area bug. It has some nice touches though, such as the animated bonus screens. Some of the animation of the items in the rooms is nicely handled too, and the overall standard of the graphics is quite good. There's nothing really wrong with the program - it's just that it palls in comparison with Shapes and Colours. The kids will probably enjoy using it as it has enough variety to hold their attention for a reasonable timespan. In summary I'd class it as fairly average, but it could be a useful buy if you need a program of this type.

Reviewed by John S Davison

SHAPES AND COLOURS
Rainbow Educational Software
Price £7.99

FIRST LETTERS
Rainbow Educational Software
Price £7.99

THE STOS COLUMN

Peter Hickman says farewell and we welcome a new STOS columnist Dion Guy who this issue brings you two type-in listings to enjoy

GOODBYE! ...

Hello STOSers everywhere. This is your intrepid programmer speaking to you directly from the Himalayas, I have finally decided to settle down and get a cave of my own away from the hustle and bustle of modern life. Actually after the Ed's brush with the tax man in the last issue I thought I had better take a long holiday, 'cos I'm probably next!!! Only joking, but as I am sure you have gathered by now this is a short paragraph that I have put together to say goodbye to you all, but don't worry STOS expert Dion Guy has kindly offered to take over the STOS column and will be flexing his word processor at you for many moons to come. Before I pop off back into fantasy land I would just like to say thank you to all those people who have made this STOS column work over the past two years, thank you to Les Ellingham for the big break (and the rest of the Page 6 Publishing team for putting up with me!) and finally thanks to all at Mandarin (now Europress) Software including François Lionet, Richard Vanner and Chris Payne.

My last duty before departing is to conclude the saga of the unpublished game. Nick Harper's "OZONE" should now be available from all good Public Domain stockists,so check it out!

... and HELLO!

Hi! My name is Dion Guy, welcome to my first STOS column! After that stunning(!) intro by Peter there seems to be very little left for me to say! But - the column must go on!

I'm afraid there's no STOS news this issue, it seems very quiet on the STOS front at the moment, but hopefully things will pick up soon. If you have heard any news or have written a mind-blowing program in STOS that you want reviewing, then get in touch! One small snippet is that Fun School 4, the latest addition to the highly acclaimed educational series, should be released by now. Again the ST versions were written with STOS, I'll have a bit more info for you in the next issue. Actually, something I've always wondered is whatever happened to Fun School 1? The first group of packages was called Fun School 2! Answers on the back of a used five pound note, please.

TWO GREAT LISTINGS

In this issue we have two programs for your delectation. First up, we have a IFF picture displayer by that all round talented person - Terry Mancey. Secondly, we have an excellent program by Bruno Azzara which allows you to configure the way your compiler works (amazing - last issue a STOS configurer and this issue a compiler configurer!). Due to go in this issue also was an accessory written by little ol' me which lets you generally experiment with your ST's colour palette. We'll bring you that one next time. As space is a little tight this issue there will be no breakdown of the programs, just some brief instructions.

IFF PICTURE DISPLAYER

This handy program allows you to display IFF pictures from STOS with ease. Type it in, select the file to load and you're away!

```
10 rem ****************************************************************************
12 rem *** IFF uncompressed picture displayer - Programmed by Terry Mancey ***
14 rem ****************************************************************************
16  :
18 key off : flash off : curs off : click off : mode 0 : scroll off
20  :
21 rem ***** EXAMPLE
22 show on : F$=file select$("*.IFF","    Select uncompressed IFF
picture file?") : hide on : if F$="" then default : end
24  :
26 erase 15 : reserve as data 15,33000 : bload F$,15 : SOUR=start(15) :
DEST=physic : PALT=true : gosub 34 : wait key : default : end
32  :
34 rem *** Display IFF (uncompressed) picture
36 rem * entry: SOUR=Source address
38 rem *        DEST=Destination address
40 rem *        PALT=palette flag
42  :
44 rem ***** SETUP PALETTE
46 if not(PALT) then goto 62
48  :
50 PTR=hunt(start(SOUR) to start(SOUR)+length(SOUR),"CMAP")+8
52 for I=0 to 15
54  : R=peek(PTR+(I*3)+0)/32 : G=peek(PTR+(I*3)+1)/32 : B=peek(PTR+(I*3)+2)/32
56  : colour I,R*$100+G*$10+B*$1
58 next I
60  :
62 rem ***** DISPLAY PICTURE
64 PTR=hunt(start(SOUR) to start(SOUR)+length(SOUR),"BODY")+8
66 for Y=0 to 200-1
68  : for P=0 to 4-1
70  :  : for X=0 to (20-1)*8 step 8
72  :  :  : doke DEST+(Y*160)+(P*2)+X,deek(PTR) : PTR=PTR+2
74  :  : next X
76  : next P
78 next Y
80 return
```

Listing 1 - IFF PICTURE DISPLAYER

COMPILER CONFIGURER

Don't just type in this program and run it, to get it to work takes a little more effort! Firstly you must load the compiler into STOS as a basic file, NOT as an accessory. Then type in the lines of Program 2 (carefully!). This will merge the compiler and the configure program together. Now save the modified compiler onto a disk for future use. Finally, run the modified compiler and go into the options section. On page 2 you will see the word 'Extensions'. Click on this and a sub-menu will appear. This allows you to choose which extensions and library files to compile. Important - while compiling, make sure the disk is write enabled to allow the configurer to work.

SO ENDS THE FIRST

That's all for this column folks! If you want to contact me, I can be found at the address below. Don't forget to include an S.A.E if you want a reply!

On a final note, if anyone out there has any STOS programs that they want to share with the world then send them in! Your listing could soon be featured in this very column (gasp)!

DION GUY
STOS COLUMN
11 SHORE CRESCENT
BISHOPS WALTHAM
HANTS
SO3 1DZ

NEXT ISSUE ...

A COLOUR DEFINER ACCESSORY

with which you can experiment with the various colours available from your ST. Join us for the next instalment of THE STOS COLUMN

Listing 2

overleaf ☞

Listing 2
Compiler Configurer

```
200 MP=1 : MX=42 : dim
NT(MP),XT(MP,MX),YT(MP,MX),IT(MP,MX),T$(MP,MX),ST(MP,MX),BT(MP,MX),CT(MP,MX),ZT(
64),EXT$(26),EXT(26),LIB$(6),LIB(6)
3327 if CHOICE=104 then gosub 11600 : gosub 10300 : gosub 10800 : return
11600 rem *** Extension switcher ***
11610 clw : reset zone
11620 LB=0 : ZNE=0 : TT=0 : previous : dir$="çcompiler" : auto back off : hide
11630 locate 0,0 : centre ">>> Extension switcher <<<" : print : centre "Written
by Bruno Azzara."
11640 gosub 12080 : gosub 11770
11650 rem * Main Loop *
11660 repeat : ZNE=zone(0) : until ZNE>0 and mouse key>0
11670 if ZNE=100 then return else if ZNE=101 then gosub 11950 : goto 11620 else
if ZNE=102 then pop : goto 3300
11680 if ZNE>39 then ZZNE=ZNE-39 : goto 11720
11690 A=int(ZNE/3.1)+1 : B=ZNE mod 3 : if B=0 then B=3
11700 if EXT(ZNE)=1 then EXT(ZNE)=0 else EXT(ZNE)=1 : inverse on
11710 gosub 12060 : goto 11750
11720 A=int(ZZNE/2.1)+1 : B=ZZNE mod 2 : if B=0 then B=2
11730 if LIB(ZZNE)=1 then LIB(ZZNE)=0 else LIB(ZZNE)=1 : inverse on
11740 gosub 12070
11750 inverse off : while mouse key wend
11760 goto 11660
11770 rem ** Draw extension screen **
11780 for A=1 tc TT : for B=1 to 3 : inc ZNE
11790 box xgraphic((B-1)*12+24)-5,ygraphic(2+A*2)-3 to
xgraphic((B-1)*12+32)+5,ygraphic(3+A*2)+1
11800 set zone ZNE,xgraphic((B-1)*12+24)-5,ygraphic(2+A*2)-3 to
xgraphic((B-1)*12+32)+5,ygraphic(3+A*2)+1
11810 if EXT(ZNE)=1 then inverse on
11820 gosub 12060 : if ZNE=TT then goto 11850
11830 next B : next A
11840 rem ** Draw library screen **
11850 ZNE=39 : for A=1 to LB : for B=1 to 2 : inc ZNE
11860 box xgraphic((B-1)*12+(B-1)*49+4)-5,ygraphic(4+A*2)-3 to
xgraphic((B-1)*12+(B-1)*49+12)+5,ygraphic(5+A*2)+1
11870 set zone ZNE,xgraphic((B-1)*12+(B-1)*49+4)-5,ygraphic(4+A*2)-3 to
xgraphic((B-1)*12+(B-1)*49+12)+5,ygraphic(5+A*2)+1
11880 if LIB(ZNE-39)=1 then inverse on
11890 gosub 12070 : if ZNE-39=LB then goto 11910
11900 next B : next A
11910 locate 4,1 : print "Main Menu" : locate 67,1 : print "Save" : locate 4,3 :
print "Previous"
11920 box 27,5 to 109,17 : box 531,5 to 573,17 : box 27,21 to 109,33
11930 set zone 100,27,5 to 109,17 : set zone 101,531,5 to 573,17 : set zone
102,27,21 to 109,33
11940 screen copy logic to back : auto back on : show on : return
11950 rem ** Rename compiler extension **
11960 for A=1 to TT
11970 if (EXT(A)=0 and mid$(EXT$(A),len(EXT$(A))-2,1)="E") then rename EXT$(A)
to left$(EXT$(A),instr(EXT$(A),".",1))+"OC"+right$(EXT$(A),1)
11980 if (EXT(A)=1 and mid$(EXT$(A),len(EXT$(A))-2,1)="O") then rename EXT$(A)
to left$(EXT$(A),instr(EXT$(A),".",1))+"EC"+right$(EXT$(A),1)
11990 next A
12000 rem ** Rename library files **
12010 for A=1 to LB
12020 if (LIB(A)=0 and mid$(LIB$(A),len(LIB$(A))-2,1)="L") then rename LIB$(A)
to left$(LIB$(A),instr(LIB$(A),".",1))+"XXB"
12030 if (LIB(A)=1 and mid$(LIB$(A),len(LIB$(A))-2,1)="X") then rename LIB$(A)
to left$(LIB$(A),instr(LIB$(A),".",1))+"LIB"
12040 next A : return
12050 rem ** Display extension or library name **
12060 locate (B-1)*12+24,2+A*2 : print left$(EXT$(ZNE),len(EXT$(ZNE))-4) :
inverse off : return
12070 locate (B-1)*12+(B-1)*49+4,4+A*2 : print
left$(LIB$(ZNE-39),len(LIB$(ZNE-39))-4) : inverse off : return
12080 rem *** Compiler Extensions ***
12090 N$=dir first$("çcompilerç*.?c?",-1) : if N$="" then stop
12100 repeat : inc TT : EXT$(TT)=left$(N$,12)-" "
12110 if mid$(EXT$(TT),instr(EXT$(TT),".",1)+1,1)="E" then EXT(TT)=1 else
EXT(TT)=0
12120 N$=dir next$ : until N$=""
12130 rem *** library files ***
12140 N$=dir first$("çCompilerç*.??B",-1) : if N$="" then stop
12150 LB=0 : repeat : inc LB : LIB$(LB)=left$(N$,12)-" "
12160 if mid$(LIB$(LB),instr(LIB$(LB),".",1)+1,1)="L" then LIB(LB)=1 else
LIB(LB)=0
12170 N$=dir next$ : until N$="" : return
62235 data 40,21,0," EXTENSIONS ",1,0,104
```

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Colour Option Extra - See Accessories

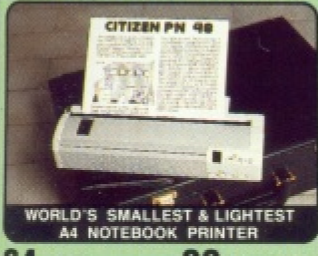
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Colour Option Extra - See Accessories

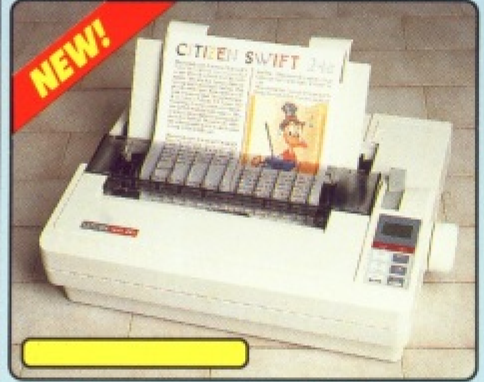
192 CPS **136** COLUMN

- *Citizen Swift 24x - 24 pin - 136 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
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24 PIN PRINTERS



216 CPS **80** COLUMN

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- *Parallel Interface*
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Colour Option Extra - See Accessories

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PRA 1753	124D/224 Swift 24/24e		£13.10
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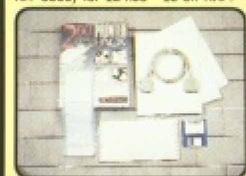
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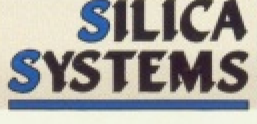


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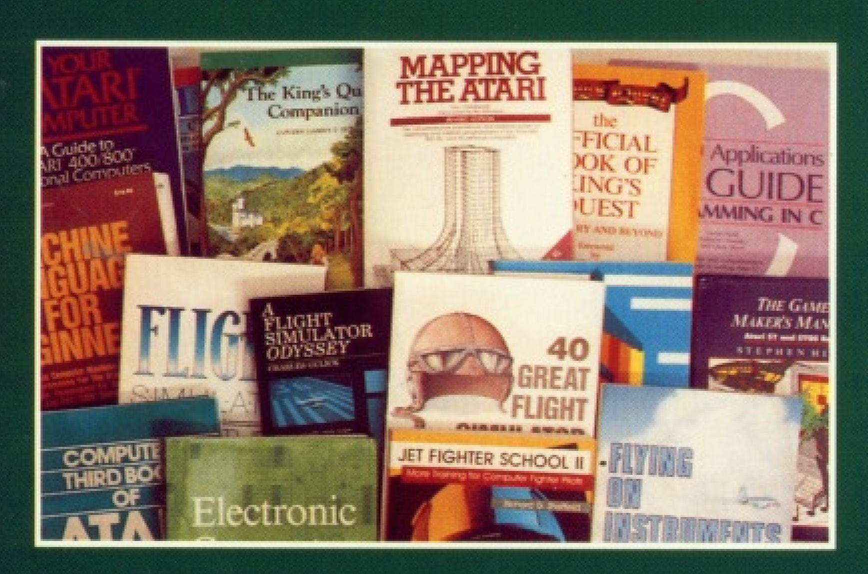


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